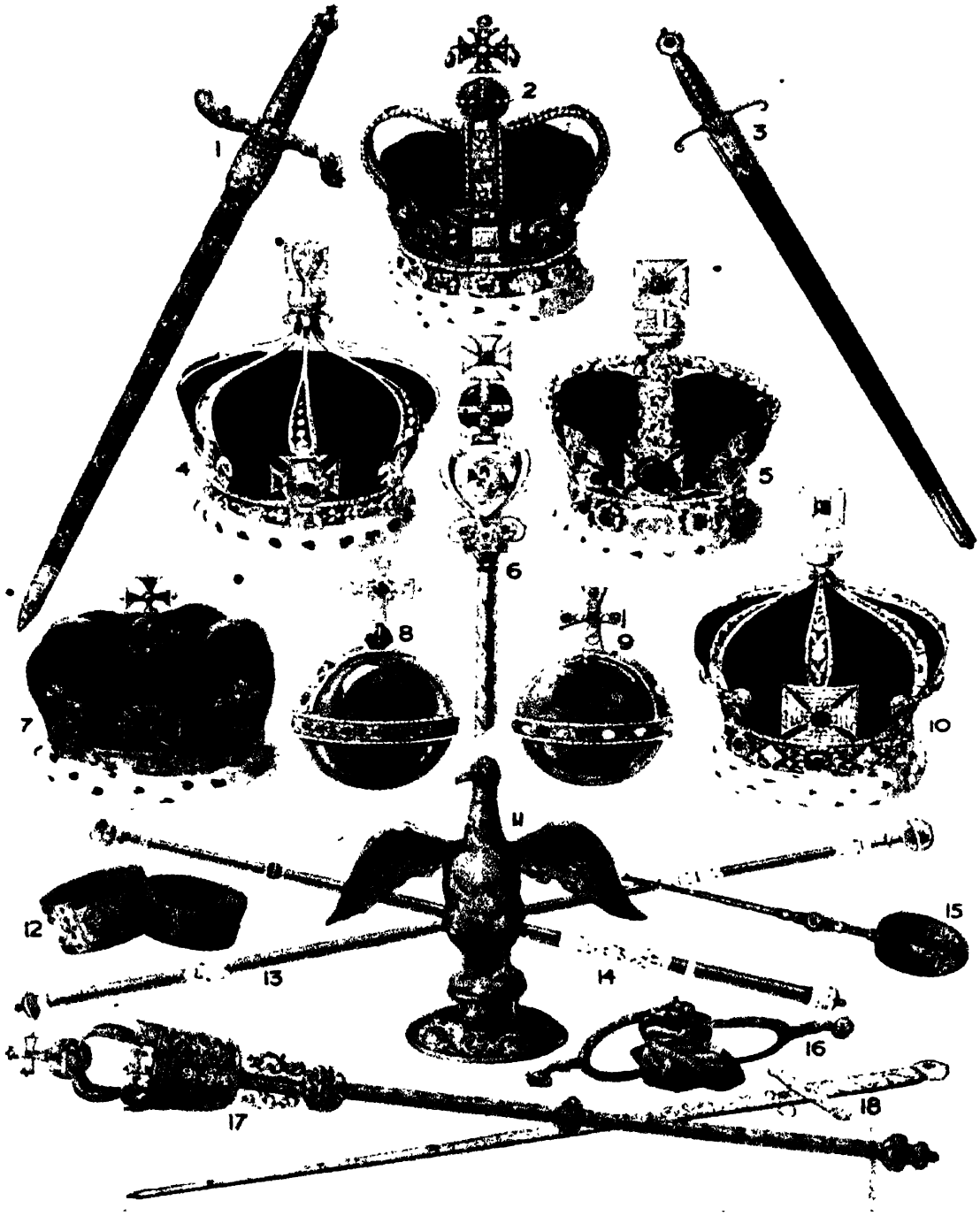
NEWNES'
PICTORIAL KNOWLEDGE

VOLUME TEN



From a coloured photograph by Photochrom Co.

SYMBOLS OF ROYALTY

The regalia, as these symbols are called, belong to the Crown and are kept in the Tower of London. Their names are as follows: (1) the Sword of State, (2) St. Edward's Crown, (3) the Sword of Mercy, (4) the State Crown of the Queen Mother, made in 1937, (5) the Imperial State Crown, (6) the King's Royal Sceptre, (7) Crown for a Prince of Wales, (8) the King's Orb, (9) the Queen's Orb, (10) the Imperial Crown of India, (11) the Ampulla, or golden vase for holding the holy oil, (12) the Bracelets, (13) the King's Sceptre with Dove, (14) the Queen's Sceptre with Dove, (15) the Anointing Spoon, (16) the St. George's Spurs, (17) the Sergeant at Arms' Mace, (18) the Jewelled Sword of State.

NEWNES'
PICTORIAL KNOWLEDGE

VOLUME 10

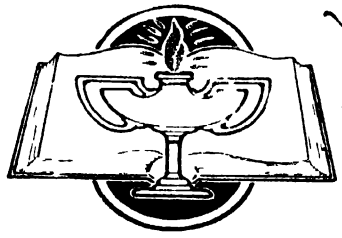
REFERENCE

General Editors
R. H. POOLE
PETER FINCH, M.A.

Associate Editor
ENID BLYTON

Technical Editor
L. MOLLOY

Art Editor
A. H. E. HUMPHREYS



BIRCHANDRA PUBLIC LIBRARY
2545
ABAMDALE

GEORGE NEWNES LIMITED
CARLTON HOUSE
66-69 GREAT QUEEN STREET
LONDON, W.C.2

RETROCONVERTED
B. C. S. C. L.

PRINTED IN GREAT BRITAIN
BY THE WHITEFRIARS PRESS LTD., LONDON AND TONBRIDGE AND
BOUND BY HAZELL, WATSON & VINEY LTD., AYLESBURY AND LONDON
N.P.K. 6 W.P. 4901/53

CONTENTS OF VOLUME TEN

Factual Index

PAGES

A TREASURY OF GENERAL KNOWLEDGE 1–416

(Illustrated with Photographs, Drawings, Diagrams and Pictorial Maps)

In The New Elizabethan Era

A PICTORIAL SUPPLEMENT OF THE CORONATION OF QUEEN ELIZABETH II 417–428

An Atlas of the World

Including Geographical Facts and Figures

	PAGE		PAGE
THE WORLD	1	AFRICA	9
EUROPE	2	SOUTH AFRICA	10
GREAT BRITAIN AND IRELAND .	3	NORTH AMERICA . . .	11
CENTRAL EUROPE . . .	4	CANADA	12
ASIA	5	UNITED STATES . . .	13
INDIA, PAKISTAN, CEYLON AND BURMA	6	SOUTH AMERICA . . .	14
CHINA	7	AUSTRALIA	15
JAPAN, KOREA AND N.E CHINA .	8	NEW ZEALAND	16

Colour Plates

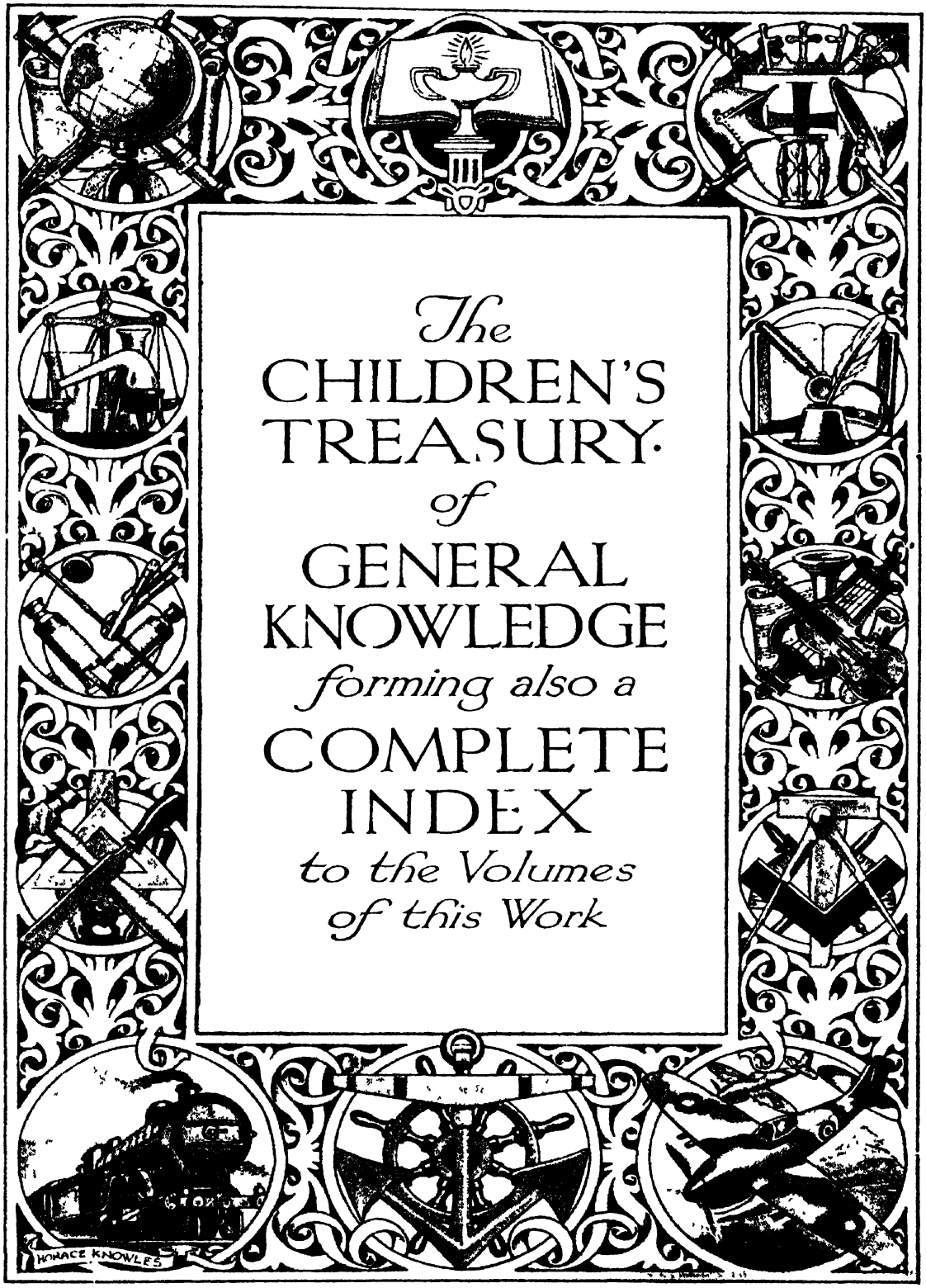
SYMBOLS OF ROYALTY . . . . . *Frontispiece*

H.M. THE QUEEN AND H.R.H. THE DUKE OF EDINBURGH . . *facing* 420

THE ROYAL FAMILY ON THE BALCONY AT BUCKINGHAM PALACE . ,, 421

THE EARL MARSHAL KNEELS IN HOMAGE . . . . . ,, 424

IN A GOLDEN COACH THE QUEEN RIDES HOME . . . . ,, 425



The CHILDREN'S TREASURY *of* GENERAL KNOWLEDGE

forming also a COMPLETE INDEX

to the Volumes of this Work

HOW TO USE THIS INDEX

This entirely new Index is something more than a mere record of all that these ten volumes contain. It is a **Factual Index** which means that in the great majority of cases the entry not only gives the number of the volume and the page, but also a brief summary of the facts or a definition of what the word means.

In a certain number of cases, indeed, it will be found that the entry in the Index does not refer you to any volume or page. Definitions or explanations of such terms as *Bill of Health* or *Bill of Lading* are given though they are not dealt with in the volumes ; the *Council of Europe* has not yet made history but it is likely to play a part as time goes on and in the Index you will learn just what it is.

Volume Number First

After the names of many cities and towns you will find the volume and page numbers given, thus : Liverpool, 3, 72, 84. The number of the volume, set in blacker type, comes first, the page number or numbers come next. Then, in this particular case, there is something about its water supply and this is given below the main entry :—its water supply, 3, 102 ; 6, 248. In a case such as the Alps, the brief facts are given but you are also referred to Switzerland in which section these mountains are more fully treated. There are, however, references in the history sections to Hannibal's crossing of the Alps, while in the chapter dealing with Roads, Napoleon's roads over the Alps are mentioned and the volume and page numbers are therefore given under Alps.

There are towns, persons, animals and birds, as well as other objects of interest, which could not be included in their different sections without making them catalogues of names, but many of them have a place in this Index. Oregon in the U.S.A. is such a place, but as you can find just where it is on the Pictorial Map, the volume and page numbers of this map are given. Pictures, Colour Plates and Photo-tone Supplements are all indexed under the subjects which they illustrate. Poems are indexed under their titles as well as authors.

Authors are dealt with under their names and the volume and page number where they are mentioned is given. In a case such as that of Shakespeare where there are references to him in several volumes the necessary numbers are given at the end of the main entry, while a reference to his youthful escapade at Charlecote Park is given a separate line immediately after the main entry as this is something distinct from his literary work. Further entries give the volume and page numbers where his poems appear in *The Children's Treasury of Verse*, while the pictures which deal with the man or his plays are also entered for easy reference.

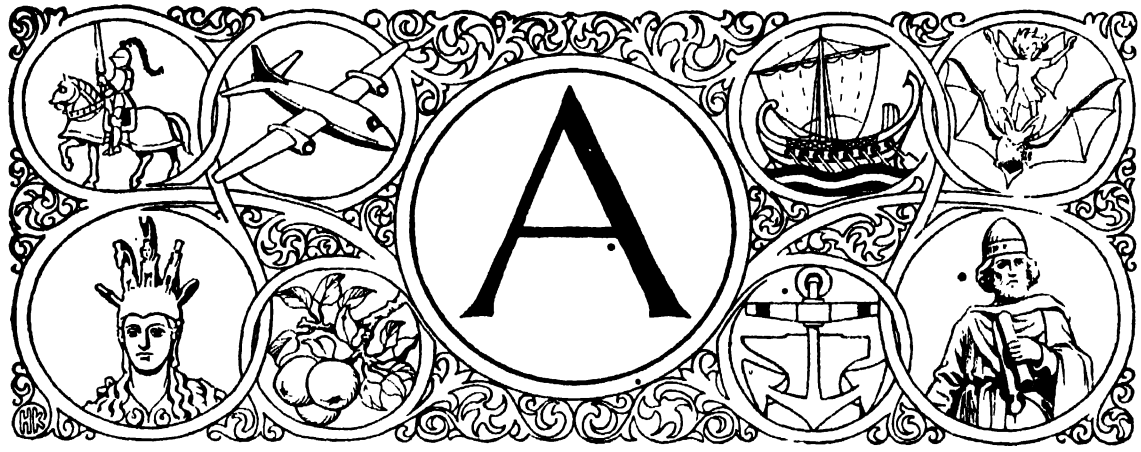
Recognising the Pictures

Wherever necessary the title of a picture is given, but where it is quite clear from the subject what the picture is about, the title is omitted. At the head of each letter throughout this Index is a specially-drawn picture heading, containing eight small drawings of subjects which appear in the Index. Many of them you will identify quite easily, but some may not be quite so readily recognised. After the entry in the Index relating to the subject of each of these small pictures is the brief italic note (*p.h.*) meaning picture heading. The other abbreviations used in this volume are few and simple : *et seq.* means that the pages following the number given continue with the same subject ; *e.g.* (*exempli gratia*), for example : Stars, 8, 169, *et seq.*, simply means that the subject of Stars is continued on several more pages after 169. Occasionally a word which has an unusual pronunciation is followed by (*pron.*) an abbreviation for " pronounced," while in front of some of the dates given you may find a small *c.* (*circa*) meaning " about." This occurs in cases where the historians have never been able to establish the exact date but think it reasonable to assume that it was about the year or years mentioned, usually many centuries ago. The letters *q.v.* after an entry mean "which see" as another entry is mentioned.

What You Want to Know

There is nothing very complicated about this Index and you should find it a simple matter to obtain the information you want quite quickly. If you merely want brief particulars you will find the facts under its right heading in the Index ; this Index will also tell you the page and volume where fuller information can be found, or where the pictures appear. The number of the volume comes first, printed in blacker type ; the page comes second.

This Index then is a quick reference book for condensed information on many hundreds of different subjects while it serves at the same time the normal purpose of a good index in being a complete guide to fuller knowledge on all the wide range of subjects dealt with in these volumes.



A is the first letter of our alphabet, as of most other alphabets, and the first of the five vowels which are free, open sounds formed without the aid of any other letter. "A" has five different sounds, as in the words "mat," "gate," "hare," "car" and "fall." The symbol chosen for the sound by the ancient Egyptians was an eagle. The Phœnicians simplified the Egyptian figure into a sign suggesting our "A" turned on its side. The Greeks turned the symbol point upwards.

It is one of the two letters of our alphabet used as a word in itself—the indefinite article. The musical note A is a major sixth above C. A is used as an abbreviation in A.D (anno Domini = in the year of our Lord); M.A. (Master of Arts); and A.B (Able-Bodied Seaman).

A1. A term often used to denote that a person or object is first class in every way. The term is derived from the classification given by Lloyd's Register to ships, the highest classification being 100A1, **5**, 270

Aa. Name of several small rivers of Europe. One of them flows through St. Omer in Northern France

A.A. means Automobile Association; also Anti aircraft.

A.A.A. means Amateur Athletic Association.

Aachen is a town of Germany, known formerly as Aix-la-Chapelle. Before the Second World War it was one of Germany's principal railway junctions and a centre of iron, steel and heavy industries

Aalborg, a seaport and town of Denmark where shipbuilding is carried on It has a cathedral and a university.

Aalesund. A town and port of Norway with fishery interests about 150 miles N.E. of Bergen.

Aar. A river of Switzerland on which stands Berne, the Swiss capital.
Picture **4**, 54

Aarau is a town of Switzerland, capital of the Province of Aargau.

Aard-vark. An animal of the ant-eater family related to sloths. It is found in Africa and the name means "earth pig."

Aard-wolf. A creature of the hyæna type found in South and East Africa.

Aarhus is an important port of Denmark. On the east coast of Jutland, it is the second of the Danish cities.

Aaron's Beard is a name frequently given to the plant St. John's Wort or hypericum.

Aaron's Rod. Popular name for the Great Mullein and for Golden Rod, both tall flowering plants.

A.B. means an able-bodied seaman.

Abaco, Great, is one of the Bahama Islands in the West Indies.

Abacus. A counting frame with beads used for calculations from the earliest days of Greece and Rome and still surviving in Russia, China and Japan. Also used in this country to teach young children to count.
Photo-tone Supplement, The Boy Through the Ages (Roman School), **8**, *between* 368 and 369

Abacus is a word employed in architecture. It means the topmost part of a pillar or column, *i.e.*, the portion that gives support to whatever may come above.

Abadan is an island and city in the Persian Gulf belonging to Iran (Persia). It is an important centre of the oil industry, **4**, 202

Abbas, Shah of Persia (Iran), ruled from 1586 until 1628 He was one of Persia's most enlightened rulers and during his reign the beautiful Royal Mosque at Isfahan was built.
Picture. **4**, 203

Abbazia is a town situated on the Gulf of Fiume, in Italy.

Abbeville. A town of Northern France, on the River Somme. It was prominent in both the world wars.

Abbey. The name given to a religious establishment ruled by an abbot or abbess. Many of the English abbeys were suppressed by Henry VIII.

Abbotsford, on the River Tweed, is the stately Roxburghshire home that Sir Walter Scott built for himself, **7**, 204
Picture: **3**, 111

Abbots Langley is a small town of Hertfordshire. Nicholas Breakspear, the only Englishman to become Pope, was born here. He became Pope in 1154 and died 1159. The church of St. Lawrence contains Norman remains.

Abbr. or **abbrev.** means abbreviated or an abbreviation, *i.e.*, that the matter has been shortened

Abbreviations are shortened forms of words in common use, or initial letters. Many of the abbreviations regularly used are short forms of Latin words or expressions, such as *pro tem*, meaning *pro tempore*, or in English "for the time being.' Initial letters are often used in the case of decorations. V.C. (Victoria Cross); D.S.O. (Distinguished Service Order), **9**, 361

Abdomen is the name given to the lower part of the body, containing the stomach, intestines, liver, spleen, kidneys and other organs which enable us to digest our food. See *How the Body Works*, **8**, 209 *et seq.* In a wasp, bee, butterfly, or other insect, it is the portion below the thin waist which almost divides its body into two parts

Abele Tree. Name often given to the white poplar, **1**, 409.
Picture. **1**, 405.

Aberconwy is the name of the oldest house in Wales, to be seen at Conway.
Picture **3**, 97

Abercromby, Sir Ralph (1734–1801). He became a cornet of Dragoons and saw much active service with the British Army. Hero of the victory of Aboukir, in which he was wounded and died.

Aberdare, Glamorganshire, is a centre of the coal, iron and steel industries, **3**, 94

Aberdeen. The county town of Aberdeenshire, Scotland. It is important for its fishing industry and is also a manufacturing centre and holiday resort. Its granite quarries are well-known and it is often referred to as "the Granite City" Its university has a high reputation, **3**, 122
Pictures: A Scottish hero, **3**, 124
Granite from Aberdeen, **3**, 125

Aberdeen Terrier. See *Scottish Terrier.*

Aberfoyle. A township of Perthshire associated with *Rob Roy.*
—General Monk ordered Aberfoyle Forest to be destroyed, **1**, 325

Abergavenny, having many industries, is a town of Monmouthshire. Some-

times called the "Gate of Wales." (*Pron.* Abergenny.)

Aberfeldy is a town of Perthshire, Scotland. It stands on the River Tay, 32½ miles N.W. of Perth. The Falls of Moness near Aberfeldy are mentioned in Burns's *Birks of Aberfeldy*. The Black Watch was first formed here in 1740.

Aberglaslyn, a wooded ravine with a stream at the bottom. It is one of the Passes of Snowdonia, **3,** 106

Abernethy, John (1764–1831). A famous surgeon, he was noted for his lectures on anatomy.

Abernethy is a very ancient town of Perthshire. It is on the estuary of the Tay and has one of the only two ancient round towers in Scotland.

Aberystwyth, Cardiganshire, stands on Cardigan Bay and is one of the most popular Welsh watering places. It is a university town, **3,** 102
Picture. **3,** 105

Abingdon, Berkshire, is an ancient market town, 6½ miles S. of Oxford, and is the centre of a large agricultural district. Its grammar school was re-founded in 1563; rebuilt 1870.

Abinger. A village and common in Surrey.
Picture: **3,** 414

Abo. A port at the south-western corner of Finland. It is now known as *Turku* (*q.v.*).

Aborigines is the name given to the original inhabitants of a country or those found by civilised people on taking over the country. See *Australian Aborigines.*

Aboukir Bay In Egypt, a little to the east of Alexandria. Here Nelson virtually destroyed the French fleet in the Battle of the Nile (1798), **2,** 197

Aboyne is a town and holiday resort on the River Dee in Aberdeenshire, Scotland. Here Highland Gatherings are held, **3,** 130
Picture: Throwing the Hammer, **3,** 133

Abraham's Heights. Great cliffs up which British troops swarmed at the taking of Quebec by General Wolfe in 1759, **2,** 187
Picture: **2,** 188

Abroad, Home-Thoughts From. A Poem by Robert Browning, **9,** 103

Abruzzi, Luigi Amadeo, Duke of (born 1873). Famous Italian scientist, traveller and explorer. He organised a Polar expedition, **2,** 358

Abu, Mount. A hill-station of Rajputana famous for its Jain Temples, **3,** 325, 342 *et seq.*

Abu El Lissaf was a battle in the War of 1914–18 in which the Turks were defeated, **2,** 383

Abutment is a part of a structure on which other parts exert a thrust. The ends of an arched bridge rest on abutments.

Abysmal Ooze is the name given to the accumulation of clay, fossils and minerals found in the deepest parts of the sea-bed.

Abyssinia is an independent empire of north-east Africa now known as Ethiopia (*q.v.*).

A.C. means Alpine Club or (in electricity) alternating current.

a/c means an account, or in account with.

Acacia. Name given to a family of trees and shrubs. Some of the varieties yield valuable gum. See also *Wattle.*

Acacia, Bull's Horn. See *Bull's Horn Acacia.*

Academia Sinica is the leading research educational establishment in China. It consists of thirteen institutes covering subjects from Physics and Engineering to History, Social Sciences, and Mathematics. Despite the long period of war through which China is passing, the Academia Sinica has continued its work, **4,** 245

Academy was the name of the grove in which Plato taught. The Royal Academy, London, was founded in 1768, and there is the Royal Academy of Music, founded 1822.

Acadia was the name of Nova Scotia in the days of the early French settlers.
Picture: **3,** 183

Acanthus. A tall-growing perennial plant. Its leaves suggested the Corinthian style of architecture. When ripe, its seeds fly as far as 10 yds., **1,** 374

Acari is the name given to an order of small creatures which includes ticks and mites.

Accelerators in motor cars are usually controlled by a foot pedal. They open a throttle and so speed up the engine.

Accents are used to denote stress on a letter when pronouncing a particular word.
Acute accent ´, as in église;
Grave accent `, as in cèleri;
Circumflex ^ (a combination of the two) as in depôt.

Accident or Illness, First Aid in. What to do in an emergency, **8,** 232 *et seq.*

Accolade is the light blow on the shoulders with the flat of the sword given by a king or his representative when conferring a knighthood.

Accompaniment is that which accompanies or goes with something else. The accompaniment of a song is the music written to go with the singing of the words.

Accordion. A musical instrument which has become very popular in recent years. It is a reed-wind instrument with keyboard, and may be called one of the smallest members of the organ family. Its modern form dates back to 1829, but the principle of the "free-reed" on which it is based is the same as that of a primitive Chinese instrument called the "cheng."
See *Musical Instruments.*

Accra is the chief port and capital of the Gold Coast, a British West African colony, **3,** 381
Picture: **3,** 379

Accrington. A large town of Lancashire 23 miles N. of Manchester. It is a centre of the cotton industry.

Accumulator is the name of a device which stores up energy. Its most familiar form is the electrical accumulator, which, when current is forced into it, undergoes chemical changes and becomes a storehouse of electricity.

Acetylene is a gas obtained by applying water to calcium carbide.

Achates was, in Virgil's Aeneid, the companion of Æneas.

Achill is the name of an island off the coast of Mayo, Eire.

Achilles was a hero of the ancient Greeks who went with the expedition to Troy. His story is told in the Iliad, **5,** 362

Achimota. A Gold Coast town where there is the Prince of Wales College, a school and university for Africans, **3,** 381

Aconcagua is the loftiest peak of the Andes, in South America, 23,000 ft. in height, **4,** 321

Aconite is the name of a perennial plant bearing blue flowers not unlike those of snapdragons. Known popularly as monkshood, the root of the European species is used in medicine. Wolf's bane is another species. All parts of the plant are poisonous.

Acorn. The fruit or nut of the oak tree, **1,** 397
—as a food for grizzly bears, **1,** 64
—how it grows into a tree, **1,** 276
Picture: **1,** 396

Acorn Shells is a term used to describe certain barnacles with shells shaped like acorns. The creatures may be found clinging to rocks at the seaside.

Acoustics are part of the science of sound-waves and must be considered when a building is constructed for voice and musical production.

A.C.P. means an Associate of the College of Preceptors.

Acre. A port of the Holy Land which has been prominent in history. It was captured by crusaders in 1191, King Richard I's troops taking a leading part in this success, **2,** 102
—Sir Sidney Smith at the siege (1799), **2,** 198

Acre, from the Greek word *agros,* meaning a field, is a British land measure containing 4,840 square yards. Originally it was the amount of land which a yoke of oxen could plough in a day and so often varied in size, but the measurements are now fixed by Act of Parliament. See *Weights and Measures.*

Acropolis, The. This was the famous ancient citadel of Athens, said to have been built by Cecrops, the legendary first king of Athens. It was destroyed during the Persian war and rebuilt by Pericles (499–429 B.C.), **4,** 155, 158; **7,** 294
Picture. How the Athenians saw the Acropolis, **9,** 15

Actium. A promontory on the coast of ancient Greece. A great naval battle took place off this coast on Sept. 2nd, 31 B.C., when the forces of Antony and Cleopatra were defeated by those of Octavian (Augustus), commanded by Agrippa.

Act of God is a legal term indicating some act of Nature which cannot be foreseen or prevented, **9,** 362

Act of Parliament. This is the name given to the decisions of Parliament on a particular subject, as for instance the "National Insurance Act, 1946." Most Acts consist of a large number of "Clauses" which deal with the details of the subject. The clauses are numbered so as to facilitate reference to them. Each Act is

printed and can be bought by the public. The clauses of the Act are always preceded by the following phrase: "Be it enacted by the Queen's most Excellent Majesty, by and with the advice of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows," 9, 59

Actuary. A person who makes the calculations as to human longevity that form the basis of life insurance and annuity policies.

Acute Accent. A mark, thus ´, made over a particular letter to denote stress in pronunciation ; église is an example.

A.D. means Anno Domini, a year or date coming in the Christian period, *i.e.*, since the birth of Christ.

Adam, of whom we read in the Bible, is said to have been the first man in the world, as Eve was the first woman. On Adam's Peak, Ceylon, is a footprint described as being that of Adam, 3, 367

Adams, John Couch (1819 92). Born at Laneast, Cornwall, the son of a farmer. He established in 1853 the fact that the moon's journey round the earth is continuously accelerated by about six seconds in a century, and determined the orbit of the meteors. He also made calculations as to the position of Neptune, 8, 159

Adams, Lieut. J. B., R.N. He was a companion of Sir Ernest Shackleton during the dash for the South Pole, 1908, 2, 372

Adams, John Quincy (1767-1848). Sixth President of the United States of America (1825-29). He supported what is called the Monroe doctrine, denying the right of European interference in American affairs.

Adams, William. A sailor of Gillingham, Kent. He was the first Englishman to visit Japan and sailed there in a Dutch ship in the sixteenth century.

Adam's Needle. Name given to the spiky plant Yucca (*q.v.*).

Adam's Peak is a mountain of Ceylon, about 7,000 ft. in height. Its summit is held to be sacred, 3, 367
—it was visited by the fourteenth-century traveller Ibn Batuta, 2, 272

Adana. A town in Turkey and one of her textile manufacturing centres. The town has a population of more than 100,000, 4, 159

A.D.C. means Aide-de-camp.

Adder. The only poisonous snake found in this country. It is about 2 ft. in length, 1, 144
Pictures: Our only Poisonous Snake, 1, 146
The Viper, or Adder, 1, 148

Adder, Death. See *Death Adder.*

Adderley Street is one of the principal thoroughfares of Cape Town, 3, 281

Adder, Puff. See *Puff Adder.*

Addis Ababa is the capital of Ethiopia (Abyssinia), an independent empire in North Africa.

Addison, Joseph (1672–1719), son of the Rector of Milston, Wiltshire. Considered to have been the greatest writer of light essays in the English language, 2, 179

Adelaide is the capital of South Australia and stands at the foot of the Lofty Mountain Ranges. It is a great business centre and has two cathedrals and a university, 3, 204, 220
Picture: 3, 226
Pictorial Map: 3, 243

Adelaide, Queen (1792-1849). A Princess of Saxe-Coburg-Meiningen, she was the wife of William IV of Great Britain.

Adelboden. A noted Swiss health and holiday resort in the Bernese Oberland.

Adelsberg, a place in Italy, is famous for its Postumia Cavern which has great stalagmites rising like cacti from the floor.

Aden. A British colony and protectorate occupying a coastal strip of south-western Arabia. It is an important refuelling and naval base, 3, 388

Ader, Clément. A pioneer in aviation, he produced a heavier-than-air machine, 5, 190

Adige, the second largest river of Italy. It rises in the Alps and flows into the Adriatic.

Adirondacks is the name of a range of mountains in New York State, U.S.A.

Ad Lib. means *ad libitum,* at anyone's discretion or pleasure.

Admirable Crichton was the name given to a Scotsman, James Crichton, born in 1560, 9, 325

Admiral. Title borne by naval officers of high rank. It was first used in the Royal Navy in 1297 when William de Leybourne was described as Admiral of the Sea of the King of England. The highest rank today is that of Admiral of the Fleet, followed by Admiral, Vice-Admiral and Rear-Admiral, 8, 2

Admiral of the Indies was a title bestowed on Vasco da Gama the navigator by the King of Portugal, 2, 293

Admiralty, Board of. is the Government authority responsible for the British Navy. It was instituted in 1628 and except for a short break has continued ever since. The Civil Lord, known as the First Lord of the Admiralty, is at the head while the First Sea Lord and Chief of the Naval Staff is in charge of all naval operations. There are Second, Third, Fourth and Fifth Sea Lords in charge of such matters as personnel, supplies, the air arm, etc. The headquarters of the Admiralty are in Whitehall, London.
—Pepys as secretary, 8, 8

Admiralty Islands are to be found near New Guinea. They are administered by the Government of Australia.

Adrenals is the name given to two glands in our bodies. Their secretion helps one to deal with emergencies and to protect oneself, 8, 231

Adrianople is a town of Turkey in Europe and stands on the Greek border. It is now known as Edirne, 4, 159

Adriatic Sea. This sea is the long, comparatively narrow stretch of water separating Italy from coastal Yugoslavia and Albania. It is entered by the Straits of Otranto, 4, 154 *et seq.*

Adula is the name given to a group of mountains in Central Europe. From one of their glaciers springs the River Rhine, 4, 65

ad val. means *ad valorem,* according to its value.

Advent is the period of four weeks previous to Christmas.

Adventure. The second ship of Captain James Cook's expedition to search for a continent in the Southern Hemisphere, 2, 312

Adventure Bay, Tasmania, is where Captain Cook landed when he reached Tasmania in 1777
Picture: 2, 315

Adventures of the Red Cross Knight, The. A Tale from the Faerie Queen, 5, 397

Advertisement is an announcement in a newspaper, or on a poster, placard, handbill, or any other method to catch the public eye. Enormous sums are spent yearly on advertising goods of all kinds. (*Abbrev.* advt.)

æ, æt. means *ætatis, i.e.,* aged (a stated number of years). The word is often seen on monuments.

Ægean Sea. A portion of the Mediterranean lying between Greece and Asia Minor. Sponges are found in its waters. Famous for its islands of Samos, Cos, Mitylene and Lemnos, 2, 10, 21; 4, 157

Ægir, in Norse fairy lore, was the giant of the seashore and his name has been given to the bore which occurs in certain rivers, such as the Severn and Trent. See *Bore.*

Æneas, in the Greek legends, was one of the captains of the Trojan force, 5, 364; 7, 122

Aerated means something that is mixed well with air, having air forced in with other gases or liquids.
—aerated water, 9, 403

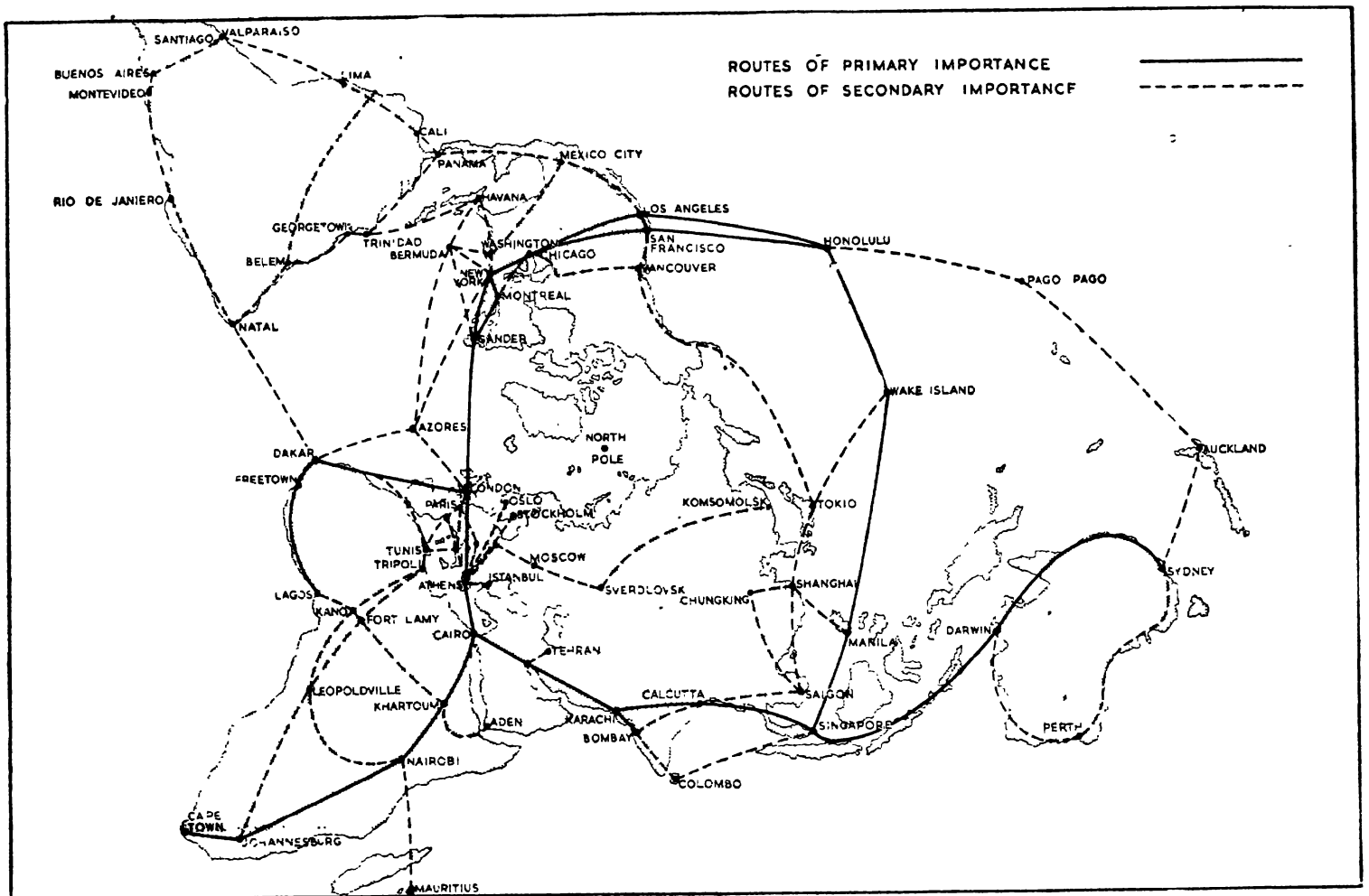
Aerial means something belonging to the air. Winds are aerial currents, airships and aeroplanes make aerial journeys; an aerial photograph is one taken from something moving through the air. Most wireless receivers are connected with an aerial wire, commonly called simply an aerial.
Pictures: 6, 217, 286, 288

Aerial Derby was the name given to an annual race round London with aeroplanes. It began in 1912, the first race being won at about 60 miles per hour, 2, 232

Aerial Root. A root growing from a stem above ground level. Many orchids have such roots by means of which the plant draws moisture and sustenance from the air.

Aerobatics is the term used to describe certain manœuvres performed with an aircraft other than those required in normal flying. The word is a combination of two—aerial acrobatics—and includes the Loop, Spin, Roll, Upside-down Flying, Bunt, Falling Leaf, Flat Turns and Sideslips. The earliest exponent of aerobatics was the famous French pilot, Pégoud (*q.v.*).

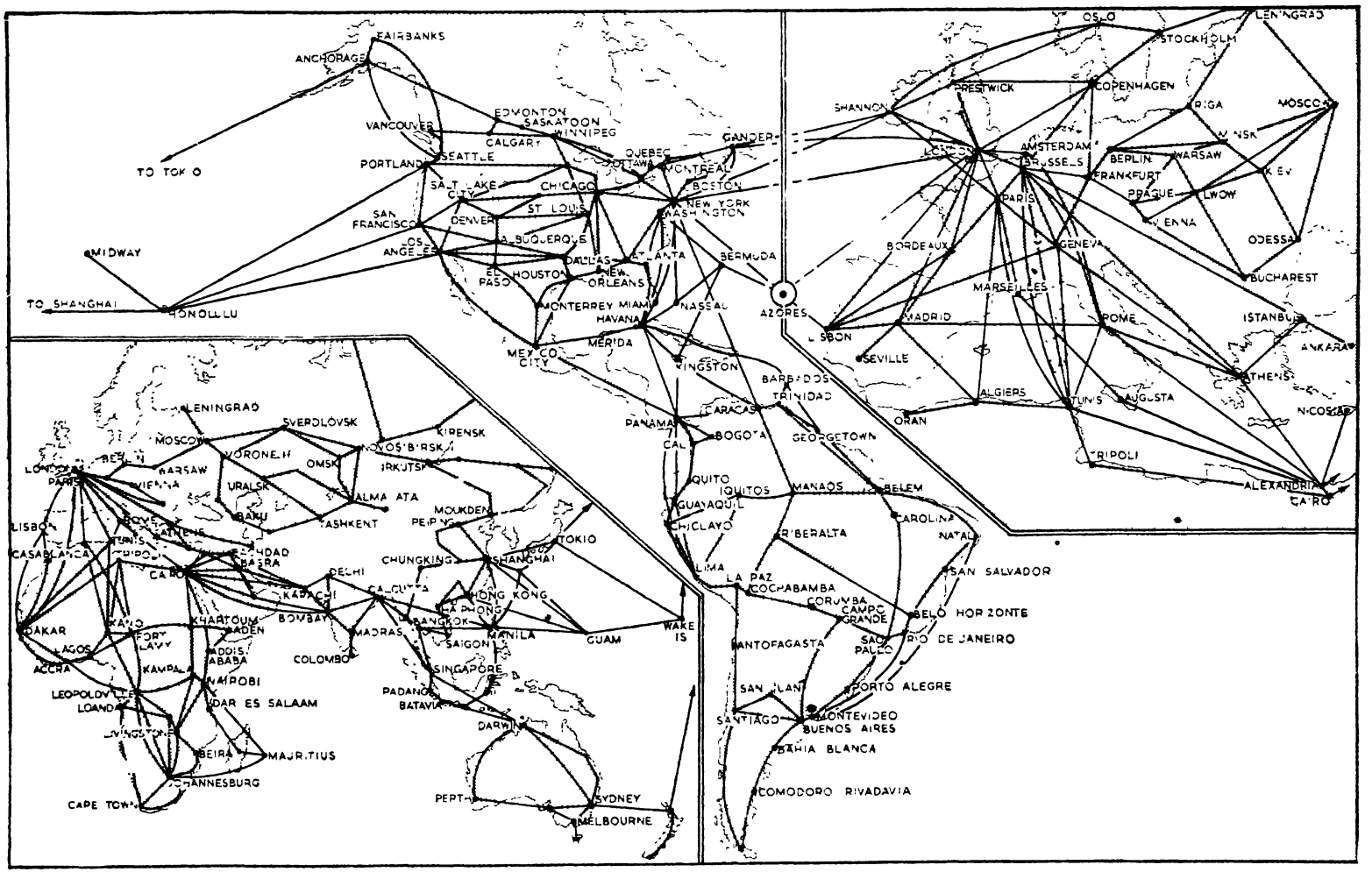
Aerodrome is the name given to a prepared landing-ground for aircraft and includes the hangars and other buildings used in connection with the aircraft and staff The word "airport" is generally used when



Specially drawn for this work.

WORLD AIR COMMUNICATIONS ON THE NEW AIR AGE MAP

The earth is a sphere and every map on a flat surface must in some way be distorted. Mercator's projection was for land and sea travel and showed the land masses and other obstacles to be overcome by surface travellers. Maps for air travel can disregard these obstacles and on the *Azimuthal* (see p. 26) projection of a world map shows the shortest distance between a particular centre and any part of the globe so that an aeroplane can travel in a straight line. This map shows world air routes of primary and secondary importance on this revised projection.



Specially drawn for this work.

HOW THE PRINCIPAL CITIES OF THE WORLD ARE LINKED BY AIR TRANSPORT

Within the past half-century world travel has been revolutionised by the invention and rapid development of the *aeroplane* (see p. 6). In this three-in-one map the principal transcontinental air routes are shown (not on the same scale), indicating how present-day air travel links up the principal cities of each continent. There are, of course, many " feeder lines " which cannot be shown here, and these serve both the intermediate and the terminal towns.

aerodromes are provided with Customs clearance offices.

Aeronaut is the name given to one who pilots or goes up in a balloon. The science of handling aircraft of all kinds is called aeronautics.

Aeronautical Stamps. Some of the stamps that have been, or are used on letters that travel by air.
Colour Plates: Aeronautical Stamps, Plate 1, **4**, *facing* 400; Aeronautical Stamps, Plate 2, **4**, *facing* 401

Aeroplane. A heavier-than-air machine, the two main types being the biplane having two sets of wings and the monoplane which has one pair of wings only. The monoplane is the more usual type nowadays.
The body of the aeroplane, known as the fuselage, carries the pilot and crew and, as a rule, the engine, as well as passengers or goods, **2**, 225
The history and development of the aeroplane is dealt with in *Conquering the Air*, **5**, 183 *et seq.*, and *Civil Aviation*, **5**, 231 *et seq.* (*p.h.*) *Air Maps*, **10**, 4, 5. *Colour Plate:* Airspeed "Ambassador," **5**, *facing* 188; De Havilland "Comet," **5**, *facing* 189

Aeroplane, Model. How to Make a 21-inch Span Rubber-driven Aeroplane, **8**, 331; a High-Wing Cabin Monoplane, **8**, 340. With *Diagrams. Pictures:* The fascination of Model Aeroplanes, **8**, 325
An Exciting Contest with Model Aeroplanes, **8**, 328
Model Aeroplane Enthusiasts, **8**, 345

Aeschylus (525-425 B.C.). The father of Greek tragedy. He had no equal in Greek literature. Author of *Prometheus Bound.*

Æsculapius was the god of medicine in Greek mythology. His symbol was a staff with a snake coiled about it since the snake renews its skin and therefore was supposed to renew its youth. This symbol has been adopted as the badge of the R.A.M.C.

Æsop (sixth century B.C.). Beginning life as a slave, Æsop gained his freedom and the friendship of King Crœsus. He won world-wide fame for his fables, **9**, 338
Fables. The Goose that Laid the Golden Eggs and The Fox Who Lacked a Tail, **5**, 324
The Fox and the Crow, and The Lion and the Mouse, **5**, 325
The Ass in the Lion's Skin and The Shepherd Boy Who Cried "Wolf!" **5**, 326
The Dog and his Shadow and A Dog in the Manger, **5**, 328

A.F.A. means an Associate of the Faculty of Actuaries; also Amateur Football Association.

Afforestation means the establishing of young trees on vacant plots of ground. Usually, as old trees are cleared, land is re-afforested.

Afghanistan is a country of Asia situated between Iran and Pakistan. It is a dry, rocky, and mountainous country with fertile plains and valleys where crops are grown. Kabul is the capital, **3**, 340; **4**, 369

Afghans are the natives of Afghanistan, **3**, 337

Africa. This continent is about 5,000 miles in length and more than 4,000 miles in breadth at the widest part. It stretches from the Mediterranean to the Cape of Good Hope and contains deserts, mountain ranges and lakes.
The greater percentage of the inhabitants are coloured people, *i.e.*, Bantus and Negroes.
The railway from the Cape to Cairo is well advanced. The total population of the continent is 158 millions. Many different nations have territories and interests in Africa, and much of its vast area comes within the British Commonwealth of Nations. The Commonwealth nations, colonies, protectorates, and other territories within Africa include: Union of South Africa (See *South Africa, Union of*); South West Africa (*q.v.*); British East Africa (Kenya, Uganda, Tanganyika, Zanzibar); British South Africa (Southern Rhodesia, Northern Rhodesia, Nyasaland, Basutoland, Bechuanaland, Swaziland); British West Africa (Nigeria, Gambia, Gold Coast, Sierra Leone); and the Cameroons and Togoland. All these are dealt with separately in this index.

African Association, founded in 1788 to promote exploration and advance British interests, **2**, 322

Afrikaans is a form of Dutch, one of the two official languages of the Union of South Africa, **3**, 280

Agadir. A seaport of Morocco which gave its name to the "Agadir incident" (1911) when the German Emperor William II attempted to intervene in North African affairs, **2**, 233

Agamemnon, in the legends, was a king and leader of the Greeks in the Trojan war, **5**, 362

Agana is the capital of the American island Guam, one of the Mariana group in the Pacific.

Agaricus Deliciosus. Name given to a form of edible fungus, **1**, 360

Agassiz, Jean Louis Rudolphe (1807–73), son of a Swiss pastor. From the study of fishes he proceeded to consider the fossil forms. He later studied the movement of glaciers.

Agave. Name given to the American aloe. A desert-dwelling plant protected by spiked leaves, **1**, 351
Picture: **1**, 354

Age of Chalk. The period in the world's history when chalk was formed on a vast scale in the clear seas, **1**, 8

Age of Crustaceans. The period when trilobites and similar animals were predominant in the world, **1**, 12

Age of Enlightenment. This title is usually employed to describe France during the reign of King Louis XV (1715-1774). It is used because during this time France came under the influence of such great thinkers and writers as Voltaire and Rousseau, **2**, 409; **4**, 8

Age of Fish. Time in the world's history when fish were predominant, **1**, 12 *et seq.*

Age of Reptiles. A period when reptiles dominated all other creatures then living, **1**, 6, 16 *et seq.*

Ageratum is a white, mauve or blue-flowered plant often used as an edging. Half-hardy annual.

Aggtelek is a town of Northern Hungary noted for its winding caves which stretch for a distance of more than five miles. Numerous prehistoric remains have been found here.

Agincourt. A small town in northern France famous for the battle (1415) named after it in which Henry V defeated a French army much larger than his own, **2**, 129, 404
Picture: Henry V at Agincourt, **2**, 131

Agra. A district and town of the United Provinces of the Dominion of India. The town is a former capital of the Moghul emperors, is noted for its great fortress, and for the Taj Mahal which is not far distant, **3**, 328
Picture: **3**, 327

Agricola, Gnæus Julius (A.D. 37-93). A famous Roman General, he was ruler or consul in Britain A.D. 77 85, **2**, 403

Agriculture. The art or science of cultivating the ground, including all forms of farming.
—experiments and research, **1**, 385 *et seq.*
—the Farmer's Busy Year, **6**, 379 *et seq.*

Agrimony. A wild plant growing on hedgebanks, roadsides and waste spaces. It may reach a height of 3 ft. and has spikes of attractive yellow flowers.
Colour Plate **1**, *between* 304 and 305 (Plate 2).

Agrippa (63-12 B.C.). Great Roman general. He helped in the construction of Ancient Rome and his name is associated with the Pantheon.
Pictures. **4**, 143

Agua. Name of the Giant Toad (*q.v.*).

A.H.S. means *Anno humanæ salutis*, *i.e.*, in the year of human salvation

Aidan, St. A missionary of the seventh century, he established the monastery at Lindisfarne. He died 651, **2**, 84

Ailanthus. Sometimes known as the Tree of Heaven. A tree brought to this country from China.
Picture: **1**, 290
—The seeds have a double wing and spin through the air like arrows, **1**, 375

Aileron is the name given to the wing-flap of an aeroplane, **5**, 198
Picture: **9**, 381

Ailsa Craig is a small rocky island, rising to a height of 1,114 feet, in the Firth of Clyde. A lighthouse, built in 1836, stands on the islet.

Ainsworth, William Harrison (1805–82). Born in Lancashire, he was articled to a solicitor but turned novelist. In all, he wrote about forty novels, chiefly historical, the best-known of which are *The Tower of London, Old St. Paul's*, and *Windsor Castle*, **2**, 411; **7**, 212

Ainu is the name of the primitive people who first inhabited Japan. There are still some people of this race in the country, **4**, 247

Air, Conquering the. A complete review of aerial progress from the earliest days to the present time,

with illustrations of aircraft of all types, including balloons, airships, aeroplanes, flying-boats, seaplanes and gliders, **5**, 183 *et seq.*
Colour Plates: An Airspeed "Ambassador" in Flight, **5**, *facing* 188
The de Havilland "Comet," the World's Fastest Air-liner, **5**, *facing* 189
Aircraft Carrier. A large warship which acts as aerodrome and mother-ship to naval aeroplanes, **9**, 374
Pictures: **8**, 19, 22
Aircraft: First Flights.
First Balloon Journey, **5**, 185
First Aeroplane Flight, **5**, 183, 192
First Aeroplane Flight Across the Channel, **5**, 194
First Atlantic Flight, **5**, 205; **9**, 295
First England to Australia Flight, **9**, 296
First Round-the-World Flight, **9**, 296
First Non-Stop Round-the-World Flight, **9**, 296
Aircraft Which Made History. A pictorial record showing the development of heavier-than-air machine from the Wright Brothers' aeroplane (1903) to the Vickers "Viscount" the first turbo-propeller air-liner in the world (1949), **5**, 228-230
Aird, Sir John (1833-1911). A British engineer, he built the Assouan Dam.
Airdrie is a town of Lanarkshire, Scotland. It is a mining centre and has ironworks, **3**, 121
Aire. Name of a Yorkshire river which flows into the Ouse. It is closely connected with the canal system, **3**, 83
Airedale is the name given to a district of the West Riding of Yorkshire through which flows the River Aire.
Airedale Terrier. A sporting dog bred originally at Airedale, Yorkshire, **8**, 315
Aire Gap, is the name given to the gap in Pennine Chain of mountains through which runs the River Aire. Through the Gap, also, goes one of the main railway routes to Scotland, **3**, 109
Air Mail. The carriage of letters by aircraft began during the reign of King George V and was first known as the Aerial Post, **2**, 232
Air Mail Stamps. Postage stamps used specially for the aerial post.
Picture: **4**, 413
See also *Aeronautical Stamps*
Air Ministry. The Government department in control of the Royal Air Force. One of its duties is to make weather forecasts.
Picture: Instrument reading on the Air Ministry Roof, **5**, 16
Airolo is a town of Switzerland at the southern end of the St. Gothard railway tunnel, **4**, 58
Airport Runways. The planning of the runways at an airport is a matter of great importance. A high standard of airport utilisation is set at the London airport.
Picture: **5**, 224
Air Raids on Britain. The story of the citizen's fight against air attacks on cities and towns during the World War told in "Their Finest Hour," **2**, 393 *et seq.*
Air Records. See *Aircraft*, **9**, 295-6
Air-sacs is the name given to important parts of our lungs. If all the air-sacs in one human being could be spread out flat they would cover a space 10 yards by 10 yards, **8**, 218
Airships are vessels of the air, supported by gas and propelled by engines. The first was driven by a small steam engine, **5**, 186 *et seq.*
—Round the World Flight by "Graf Zeppelin" in 1929, **9**, 296
Pictures: The Airship R.100, **5**, 189
Airspeed "Ambassador" is the name given to a type of aeroplane which has been selected as a standard passenger liner by the British European Airways Corporation.
Colour Plate: An Airspeed "Ambassador" in Flight, **5**, *facing* 188
Airy, Sir George Biddell (1801-92). Son of an exciseman, he was born at Alnwick and educated at Cambridge. He re-organised Greenwich Observatory, founding the magnetic and spectroscopic departments.
Aisne is a river of France. The name is also given to a department or county of which Laon is the capital. The district saw much fighting in the War of 1914-18.
Aitutaki is one of the Cook Islands, belonging to New Zealand. It was discovered by Captain Cook in 1777.
Aix-la-Chapelle. See *Aachen*
Aix-les-Bains is a spa and health resort of France, in the Savoie district. It was known to the Romans and the ruins of their baths still remain
Ajaccio, on a Gulf of the same name, is the capital of the French Mediterranean Island of Corsica. It was the birthplace of Napoleon Bonaparte, **4**, 148
Ajax, according to the legends, was one of the Greek heroes in the Trojan war, **5**, 362
Ajmer is a town and trading centre of India, in the Province of Rajputana.
Ajmer Gate is the name of one of the entrances to and exits from Delhi, **3**, 332
Akaba. A town of Arabia, on the Red Sea, **2**, 383
Akbar (1542-1605). The greatest Asiatic monarch of modern times. His empire embraced all North India from Cashmere to Behar, **3**, 326, 328
A.K.C. means an Associate of King's College, London.
Akron, a city in Ohio, U.S.A., is a great centre for rubber products
Akron. A large airship used by the U.S.A. Navy as an aircraft carrier. She sank in a storm in 1933, **5**, 188
Akureyri is the northern port of the republic of Iceland, **4**, 48
Ala. means Alabama, one of the United States of America.
Alabama is one of the southern States of the U.S.A. It is a great cotton centre and has agricultural interests of all kinds. Montgomery is the capital.
—it is a source of bauxite, **6**, 131
Pictorial Map: **4**, 291
Alabaster is a soft, white, semi-transparent stone used for making ornaments, statues, etc.
à la carte. The bill of fare. A list of food dishes at a restaurant where the price of each dish is given separately.
Aladdin and the Lamp. A Story from the Arabian Nights, **5**, 307
Alamein, El. See *El Alamein.*
Aland Islands (*pron.* Awland), belonging to Finland, are in the Gulf of Bothnia. About 80 of the 300 are inhabited.
Alaric, who lived about the year 400, was a leader of the Visigoths. He conquered Rome.
Alaska is a peninsula at the north-western tip of North America, part of the territory of the U.S.A. It is very mountainous and has much forest land. Its chief industries are mining and salmon fishing. The Alcan Highway from Canada runs across the country to Bering Strait. Juneau is the largest town, **3**, 197, **4**, 294
—the Salmon fisheries, **3**, 174
Picture **4**, 295
Albania. A mountainous country on the eastern shore of the Adriatic Sea. Its capital is Tirana and its population numbers a little over a million, **4**, 156, 362
– seized by Italy, **2**, 246
Albany is a port of Western Australia with a particularly fine anchorage, **3**, 220
Pictorial Map: **3**, 242
Albany is the capital of the State of New York and is one of the oldest towns in the U.S.A. It stands on the Hudson River and is a manufacturing and industrial centre.
Albany Settlers, The. These settlers were sent from England in 1820 to Algoa Bay in Cape Province, South Africa. They were called the Albany Settlers because, on their arrival at what is now Port Elizabeth, they were given farmland in Albany, a coastal district to the north-east of Port Elizabeth, **3**, 276
Albatross. A large, web-footed sea-bird with an immense wing-span. It can keep pace with a ship for long periods, **2**, 345
Albemarle, Duke of. See *Monk, George.*
Albert is one of the large lakes of East Africa. It is about 100 miles in length, **3**, 370
Albert, Prince Consort (1819-61) Younger son of the Duke of Saxe-Cobourg-Gotha, he was chosen by Queen Victoria as her consort. The marriage took place in 1840, **2**, 216, 223
Pictures: **2**, 213, 214
Albert, King of the Belgians, (1875-1934). He ascended the Belgian throne in 1909 and led his country during the First World War, **2**, 244
Albert Edward were the two names given to King Edward VII at his christening, **2**, 223
Albert Medal. An award given to civilians for deeds of heroism by land and sea. It was originated by Queen Victoria in memory of the Prince Consort.
Albert Park in Auckland, New Zealand, is noted for its exotic trees.
Picture: **3**, 270
Albert Victor, Prince, Duke of Clarence. Elder brother of Prince George (second son of King Edward VII). His death, in 1892, made his younger brother heir to the throne and he acceded subsequently as King George V, **2**, 229
Alberta is one of the provinces of Canada and lies between Saskat-

chewan and British Columbia. It is a rich, wheat-growing province whose capital is Edmonton, 3, 175 *et seq.*
—Alberta's Oilfields, 6, 314
Pictures: American Bison, 3, 155
Jasper Park Lodge, 3, 191
Canada's Traditional Oil Centre, 3, 192
Majestic Beauty of Banff, 3, 193
Photo-tone Supplement: The Dominion of Canada, 3, *between* 160 and 166
Colour Plate: In Canada's Greatest National Park, 3, *facing* 196

Albion as a name for Britain comes from the Latin *albus* meaning white, and the Romans probably used this name when they saw the white cliffs of Dover.

Albuquerque is the largest city and trading centre in the State of New Mexico, U.S.A.

Albury is a town of New South Wales, Australia, standing on the River Murray which flows along the borders of New South Wales and Victoria. Not far from the town is the famous Hume Dam, 3, 213
Picture. 3, 211

Alcan Highway is the name of a great road running from Edmonton, Alberta, Canada, to the Bering Strait in Alaska. It is 1,500 miles in length, 3, 196 *et seq.*
Pictures: At an Airfield on the Alaskan Highway, 3, 197
Doing the Work of Many Men, 3, 198

Alcester is a small market town of Warwickshire, 15 miles south-west of Warwick by rail.

Alchemist means one who practised alchemy, the early form of chemistry. Alchemists existed from the twelfth to the seventeenth centuries. They were occupied chiefly with the search for means of changing the base metals into silver and gold, 6, 138

Alcock, Sir John William (1892–1919). With Sir Arthur Whitten Brown, he made the first direct flight across the Atlantic in 1919, 5, 205

Alcohol is a liquid obtained from grapes, potatoes, grain and other vegetable substances by fermenting and distilling them. Alcohol is the intoxicating part of wine, beer and spirits.

Alcott, Louisa M. (1832–88). An American writer, well-known as the author of *Little Women,* 7, 272
Photo-tone Supplement: United States of America, 4, *between* 272 and 273

Aldebaran is the name of a star of the first magnitude found in the constellation of Taurus the Bull, 8, 174

Aldeburgh is a small seaside resort on the East Coast, once an important port, 3, 60

Alder. A tree growing beside streams and in marshy ground. The timber is used for furniture, 1, 406
Picture: 1, 402

Alderley Edge. A famous Cheshire landmark from which beautiful views of the Cheshire plain can be obtained.
Picture 3, 405

Alderman. An officer next in dignity to the mayor of a city or borough. Originally a Saxon title.

Alderney. An island, 3½ miles long and about a mile wide, the third largest of the Channel Islands. Well-known for its famous breed of cattle, 3, 52, 53

Aldershot. An important centre of the British Army in Hampshire and a Command Headquarters, 3, 34

Aldgate was the eastern boundary of the City of London. The gate was removed in 1761, 3, 14

Aldhelm, St. (*c.* 640–709). An English missionary and scholar.

Aldwych is a noted London crescent built on ground cleared in 1903. At one end is Australia House.
Picture: 3, 13

Aleppo is the most populated town in the republic of Syria. It is in the north of the country and has an ancient citadel built by one of the sons of the great Saladin, 4, 190, 200
Picture. 4, 176

Alessandria is the name of a district of Italy and of its capital, a centre for macaroni

Aleutians is the name of a chain of islands off the south-west corner of Alaska, in the Pacific. Fishing and sealing are the chief occupations. They belong to the U.S.A.

Alexander I (1777–1825) was Tsar of Russia from 1801 until 1825. At first favourable to England, he later made peace with Napoleon, subsequently turning once more against the French Emperor. He gave Poland a constitution in 1815, 2, 410; 4, 123

Alexander III (1845–94). Tsar of Russia. He ruled from 1861 until his death and opposed reforms influenced, no doubt, by the fact that his father had been assassinated by extremists, 4, 106

Alexander the Great (356–323 B.C.). Son of Philip of Macedon. He subdued all Asia Minor and Persia and made an expedition into India. It was he who planted Greek culture in Asia, 2, 38, 402; 3, 311; 4, 202; 7, 1; 9, 20
—how he won his Empire, 2, 42
—Lord of Persia, 2, 44
—he entered India through the Khyber Pass, 3, 338
—he founded the port of Alexandria, 4, 195
Pictures: His Horse Bucephalus, 2, 39
He Rides His Horse, 2, 40
He takes the Horse into Battle, 2, 41
The Order to Advance, 2, 42
The Way to Asia Lies Open, 2, 43
Facing the Chariots, 2, 44
Death of the Emperor, 2, 46

Alexander, Lord, of Tunis. Born in 1891 and christened Harold Rupert Leofric George. He served with distinction during the Second World War as Commander-in-Chief, Middle East, and later as Commander-in-Chief of the Allies in Italy. He was Governor-General of Canada 1946–52, and received an earldom on relinquishing this position

Alexandra, Princess. Only daughter of the late Duke of Kent, she was born in 1936.

Alexandra, Princess of Denmark (1844–1925). In 1863 she became the bride of the Prince of Wales and her memory is revered as our Queen Alexandra, 2, 223
Pictures: At a Royal Marriage Ceremony, 2, 224
The Princess from Over the Sea, 2, 225

Alexandria. A city founded in 332 B.C. by Alexander the Great. It is to-day the principal port of Egypt, 2, 43, 402; 4, 194, 195.
—in the days when Greek civilisation was spreading, it became a great centre of learning. Euclid was the founder of a mathematical school and one of his pupils was Archimedes. Schools of astronomy and geography, as well as a great library, were also established, 7, 340, 348
—it contained a pharos or lighthouse, 7, 292
Picture: 7, 287

Alexandrine Rat. Name of the black rat which is said to spread the plague and other diseases, 1, 136

Alexandrovsk is a town and seaport of the Soviet Union on the Murman coast.

Alfonso XIII (1886–1941). King of Spain. He abdicated in 1931 and his country became a republic, 2, 412

Alfred, King (849–901). Born at Wantage, he became king of the West Saxons in 871 and was at once in conflict with the Danes. He was the first English king to command his ships in a sea-fight and may be regarded as the founder of the British navy. He ruled all England south of the Thames and at his death left the country in marked prosperity (*p.h.*).
—When King Alfred ruled, 2, 85, 404
—why he was called "Alfred the Great," 9, 323
Pictures. King Alfred and the Cakes, 2, 85
The Danes Coming up the Channel, 2, 86
Alfred in the Camp of Guthrum, 2, 87
King Alfred rebuilds London's walls, 2, 405

Alfreton is a coal-mining and industrial town of Derbyshire. It is the market centre for a densely populated district.

Alga. A form of plant-life, including that of seaweed. **Algæ** (plural) are found in lichens, 1, 358

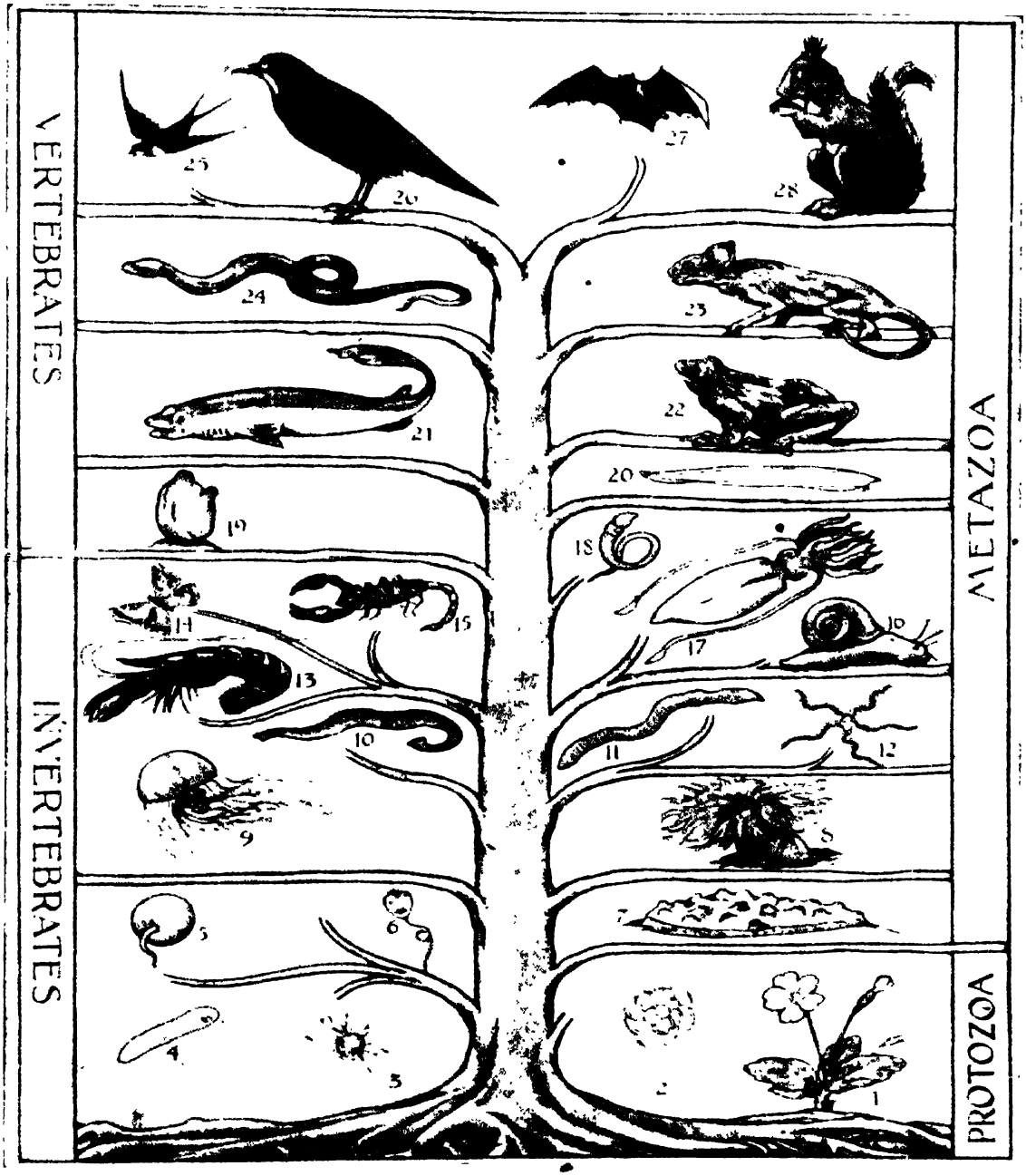
Algebra is a system of mathematics in which signs (generally letters, *e g*, a, b, c, x, etc.) are used instead of numbers. It was used by astronomers in Egypt and Babylon in ancient times and was revived in its modern form in the sixteenth and seventeenth centuries.

Algeciras is a seaport and town of Spain, near Gibraltar.

Algeria occupies a large area of northern Africa and has a Mediterranean coast line. It is an overseas department of the French Union, and is virtually a French colony. It consists of the three departments of Oran, Algiers, and Constantine, and the Southern Territories. Agricultural interests include vineyards (for wine), grain crops, tobacco, cattle and horses. There are also forests of cork, oak and other trees. The capital is Algiers, 4, 18, 166, 377

Algiers. The chief town and port of the French overseas department of Algeria in northern Africa. From it, fruit, olives, and wheat are shipped.

A GENEALOGICAL TREE OF ANIMALS



It was in the shallow waters near the shore that the first forms of life developed, and the first types of plant life were evolved. Then came the earliest forms of *Animal Life* (see p. 14) and gradually along the different branches many types and varieties evolved from the early unicellular forms (know as Protozoa), the multicellular animals (Metazoa) and the Invertebrates, the molluscs, crustacea, insects, and then the Vertebrate animals. Each branch produced many different varieties of its class. A complete key to all the forms of Animal Life shown in this illustration is given on page 14 of this volume.

It was once a pirate stronghold, **4**, 166

Algoa Bay. A bay off the east coast of South Africa. Here Bartholomew Diaz put in. Its town is Port Elizabeth, **2**, 287
Picture: **3**, 280

Algonquins is the name of a tribe of Red Indians.

Alhambra. A Moorish fort and palace built 700 years ago in the Spanish city of Granada, **4**, 134, 136
Photo-tone Supplement: Built by Moor and Monarch, **4**, *between* 112 and 113

Alias means literally otherwise. It is used generally for a name which is not the proper one of the person using it. When a writer adopts a pen-name he is using an alias, but quite lawfully. In this case it is usually termed a nom-de-plume.

Alicante is a province of Spain. Its capital (of the same name), on the Mediterranean, exports oranges, lemons and other fruits, **4**, 136

Alice. A town in Cape Province, South Africa, famous as the home of the Fort Hare Native College which is a centre of higher education for the Bantu people
Pictures: **3**, 287

Alice of Battenberg, Princess (Born 1885). The English wife of Prince Andrew of Greece (died 1944) and mother of H.R.H. The Duke of Edinburgh, **2**, 265

Alice Springs. A township of Northern Territory, Australia, in the MacDonnell Ranges, **3**, 222
Picture **3**, 225
Pictorial Map: **3**, 243

Alien. Name given to a person living in a country to which he does not rightly belong by birth.

Ali Masjid is the name of a place in the North-West Frontier Province of Pakistan where the Khyber Pass enters a deep gorge, **3**, 340

Alimentary is a word related to food or nourishment. The alimentary canal of the body is the passage through which food goes while being swallowed, digested and absorbed.

Aliwal North is a town of Cape Province, Union of South Africa. It stands on the Orange River.

Alkaloid is something containing alkalis or substances which combine with acids to form salts. It is an alkali that unites with fat or oil to make soap.

Alkmaar. A town of northern Holland with a population of more than 37,000. It is noted for its cheeses, **4**, 31, 353

Allah is the god of Mohammedans.

Allahabad is one of the places of pilgrimage in India and regarded as a Holy City by both Mohammedans and Hindus. It is the capital of the United Provinces.

Alleghany is (1) a river of the U.S.A; (2) the name of a range of mountains running along the Atlantic coast of the U.S.A. and forming part of the Appalachian Highlands, **3**, 160; **4**, 263

Allegiance is the tie which binds a subject to his sovereign or government. A Member of Parliament, after being elected, may not vote in the House of Commons until he has taken the oath of allegiance to his sovereign.

Allegory is a way of treating a subject in a figurative manner. Pilgrim's Progress is a well-known example.

Allegri, Antonio. See *Correggio.*

Allen, Bog of. See *Bog of Allen.*

Allen is the name of a Lough in Eire dividing the counties of Roscommon and Leitrim.

Allenby, Lord* (1861–1936). Well-known British soldier. He fought in the South African War and was an Army commander in the War of 1914–18. He conducted a brilliant campaign in Palestine, taking Gaza, Beer-sheba and Jerusalem and eventually overthrew the entire Turkish Army, capturing Damascus and Aleppo, **2**, 239, 383

All Fools' Day is the name given to April 1st

All Hallows refers to All Saints' Day celebrated on November 1st.

Alligator. An animal found in America. It is akin to the crocodile, **1**, 114
Pictures: American Alligators, **1**, 113
Alligator and Frog, **1**, 115

Allingham, William (1824–89). English poet. For a time in the customs service, he afterwards devoted his life to literature.
Poems: The Fairies, **9**, 88
Four Ducks, **9**, 114

Alloa, standing on the River Forth, is an industrial town of Clackmannanshire, Scotland.

Alloway is a village of Ayrshire, the birthplace of Robert Burns.
Picture: **3**, 111

Alloy is the fusion of two or more metals. Brass is an alloy of copper and zinc.

Allspice is a variety of pepper so-called because its aroma is that of a mixture of spices. It is obtained from the *Pimento* (*q v.*).

Alluvial is a word meaning something deposited by running water. The Delta of the Nile is composed of alluvial soil, brought down by the Nile during floods.

Alluvial Gold is found as loose grains, flakes or nuggets in the sand or gravel of streams, **6**, 88

Alluvial Tin. See *Tin.*

Alma is a river of the Crimea, Soviet Union. It figured in the Crimean War, giving its name to a famous battle, **2**, 217

Almanack. A book or sheet containing a calendar of the days, weeks and months of the year and giving information about the tides, the rising and setting of the sun and moon and other useful facts. Whitaker's Almanack, first published in 1868, is now regarded as an invaluable book of reference. Usually spelt Almanac, but the older form is often retained.

Alma-Ata. A region of the republic of Kazakhstan in Soviet Central Asia and the name of the capital of that republic. In this region mining centres for ore containing uranium are being developed, **4**, 118

Almaden. A town in southern Spain and a centre of mercury (quicksilver) mines, **4**, 136, 365.

Almagest was the name of a great work prepared by the astronomer Ptolemy, it contained a catalogue of 1,025 stars, **8**, 107

Alma-Tadema, Sir Lawrence (1836–1912), Anglo-Dutch artist. Noted specially for his paintings of classical subjects, **7**, 98
Pictures: A Reading from Homer, **2**, 1
The Vintage Festival, **2**, 47

Almaza is the name of the great airport of Cairo, the capital of Egypt. It is used by the planes of many different airlines, **4**, 195

Almelo. A town of north-east Holland and a cotton and linen manufacturing centre. It has a population of nearly 40,000, **4**, 31

Almeria is a province of Spain, the name being also given to its provincial capital which is a fruit-exporting centre on the Mediterranean, **4**, 136

Almond is the name of two rivers of Scotland. One empties into the River Tay and the other into the Firth of Forth.

Almonry. A place in which alms are given to the poor, such as the Almonry at Westminster, **2**, 137

Almshouses are homes provided for aged people. They are usually the gift of charitable persons, or of institutions.

Alnwick is a town of Northumberland famous for Alnwick Castle.

Aloe as used in medicine is the juice of the plant. It reaches us pressed into cakes, **1**, 334
—how its spines protect the plant, **1**, 351
Picture **1**, 354

Alor Star is the capital of Kedah, a district of Malaya. It was visited by a party of British astronomers to observe a total eclipse of the sun See *Eclipses of the Sun.*
Pictures: A Giant Camera, **2**, 362
The Progress of a Solar Eclipse, **2**, 363
A Total Eclipse of the Sun, **2**, 369

Alora is a town of Spain, a centre for fruits.

Alpaca. A member of the camel family, this animal lives in the Andes in Peru. It is valuable for its soft, reddish wool which is woven into hard-wearing alpaca cloth, **4**, 394

Alpenstock is the name given to a long stave of wood with a pointed end of metal. It is used in mountaineering.

Alpes-Maritimes is a district of the South of France which includes the Riviera.

Alphabet. The word itself comes from *alpha* and *beta,* the names of the first two letters of the Greek system, **9**, 334
—"Your Own Special Corner," first lessons on the letters of the alphabet for boys and girls who are still too small to read for themselves, **9**, 117 *et seq.*
Picture. How Our Alphabet Began, **8**, 179

Alpha Centauri is the name of the star nearest to the earth. It is distant 25 billions of miles or 4¼ light years, **8**, 169

Alp-horn. An unusual instrument played in Switzerland, as its name suggests, in the mountains. It is made of wood and is about twelve feet long
Picture: **4**, 60

Alpine Italy is that part of this country north of the Lombardy Plain, **4**, 150

Alpine Marmot. A squirrel-like animal that may be about 20 in. in length. It is found in the Alps as well as in the Carpathian Mountains and Pyrenees.

Alpine Strawberries are small in size but the plants keep on bearing all the summer through.

Alpines. Plants which often grow at high altitudes and are cultivated in garden rockeries or special Alpine greenhouses.

Alps is the name given to a great mountain system of Central Europe, extending over parts of France, Switzerland, Southern Germany and Upper Austria and Northern Italy. Some of the peaks rise to fifteen thousand feet and provide sport for the Alpine climber and mountaineer. Winter sports, such as skiing, have given rise to a large number of pleasure resorts in the Alps specially catering for such pastimes. Among the foothills of the Alps are large and beautiful lakes. Passes carry roads across the Alps and in several places they are pierced by railway tunnels. how Hannibal crossed the Alps, **2**, 63
Napoleon's Roads over the Alps, **5**, 36
Picture **2**, 64
See also *Switzerland*

Alsace. A province of France on the borders of Germany With the neighbouring French province of Lorraine, it was taken by Germany after the Franco-Prussian war (1870 71) and returned to France after the First World War 1914 18, **4**, 10

Alsatian Dogs. Originally the sheep dog of Northern France the Alsatian is popular as a house dog, **8**, 315

Alster is the name of two adjoining lakes of the German seaport of Hamburg One is the Binnen-Alster and the other the Aussen-Alster. Actually they are more basins than docks Some parts of the city around them escaped destruction during the Second World War, **4**, 84

Alt. in maps, etc , means Altitude (*q.v.*).

Altamira Cave, to be found near Santandar, in Spain, contains wall pictures of the Stone Age, believed to be 25,000 years old The caves were discovered in 1879
Pictures Painted by Cave-Dwellers, **7**, 2
A Prehistoric Work of Art, **7**, 3

Altar of Heaven. See *T'ien T'an*

Altdorf. A small town on the shores of Lake Lucerne in Switzerland where William Tell, the Swiss national hero, is said to have defied the tyrant Gessler, **4**, 56

Alternative Vote. A proposed method of voting at public elections designed to correct defects in our present voting system, **9**, 54

Altimeter is an instrument used on aircraft to show height above sea-level. It is a delicate form of aneroid barometer.

Altitude is the vertical height above the level of the ground or the sea.

Altmark. A German submarine supply ship on which some 300 British seamen were imprisoned. They were rescued by H M.S. *Cossack* in Feb. 1940, **2**, 248

Alto-Cumulus clouds are usually made up in waves and seldom seen at a great height.
Picture Seen in Waves, Of Medium Height, **5**, 9

Alton. A town of Hampshire, the centre of an agricultural district.

Altrincham is an industrial town of Cheshire, a centre of engineering, 8 miles from Manchester

Alum Bay is to be found at the western-most end of the Isle of Wight Near-by are the Needles, **3**, 3

Aluminium is an element (symbol Al). A very light white metal, it is something like tin to look at but resembles silver in lustre when polished It is never found in its native state, unlike many other metals, but it can be extracted from certain ores containing it, such as bauxite, **6**, 131; **9**, 346
—the Aluminium produced at Arvida, Quebec, is enough not only for the whole British Commonwealth but for half the requirements of the U.S.A., **3**, 195
Pictures Hydro-electric Power for an Aluminium Works, **3**, 128
Bauxite being reclaimed, **3**, 189
Aluminium Highway Bridge, **3**, 194
The Shipshaw Dam, **3**, 189
The First Bridge Made of Aluminium Alloy, **6**, 131
A Breaking-down Mill, **6**, 133
Colour Plate How Scotland's Water Drives An Aluminium Works, **6**, *facing* 132

Aluminium Company of Canada has, at Arvida, Quebec, the largest aluminium plant in the British Commonwealth, **3**, 195
Pictures **3**, 189

Alva, Duke of (1508 83). A famous Spanish soldier best known for the ruthless way in which he suppressed Protestants in the Low Countries, **4**, 20

Alwar is a district of Rajputana, India. It gives its name to the ancient capital

Alyssum. What is known as Sweet Alyssum is a hardy annual plant much used for edgings, **8**, 278

Alyssum Saxatile. A dwarf-growing perennial plant bearing masses of bright yellow flowers Often known as Gold Dust

A.M. means ante meridiem, *i.e.*, before 12 o'clock noon. When expressing 12 o'clock we should add noon or midnight for the exact hour is, strictly speaking, neither a m nor p m.

Ama. A bird of the Amazon Valley sometimes called the Hoatzin. The young are hatched with claws on their wings which enable them to climb about in trees.

Amalfi is a small coast town of Italy, noted for its scenery. It stands on the Gulf of Salerno, **4**, 152

Amalgam is a mixture or alloy of mercury and some other metal. With the exception of platinum and iron, all metals will form an amalgam with mercury.

A-Marketing, A Fairy Went. Poem by Rose Fyleman, **9**, 114

Amaryllis is the name of the Belladonna lily.

Amasis II (died 526 B.C.). Name given by the Greeks to two Egyptian kings who were known in their own land as Aahmes.
—Polycrates made friends with Amasis, **2**, 10

Amateur. One who practises an art or pastime simply for the love of it and not for gain. Most boys are amateurs of cricket Some, when they grow up, become professional cricketers, being paid for playing the game.

Amazon. Name of the great river of Brazil which flows into the Atlantic. It is navigable for about 2,500 miles to ocean-going steamers About 4,000 miles in length, it drains nearly one-half of South America; it is the largest river in the world in volume and the second longest in length, **2**, 339; **4**, 314 *et seq.*
Pictures The Source of the Amazon, **4**, 318 and 319

Amber was the old-time capital of Jaipur State in India, **3**, 342

Amber is fossilised resin from the trees of extinct pine forests It is brittle and generally a pale yellow in colour, though sometimes dark like resin, **7**, 356, **9**, 374

Ambergris, which comes from the sperm whale, is used in making scent, **9**, 242, 364

Amble is a town and seaport of Northumberland Coal from the Newcastle district minefields is exported from Amble

Ambleside is a market town of Westmorland situated on Lake Windermere, **3**, 90
Picture **3**, 89

Amboina. An island which forms the capital of the Moluccas, or Spice Islands, in the Dutch East Indies.

Ambulance is the name given to a wheeled stretcher, or a vehicle or aeroplane, used for carrying injured, wounded or seriously sick people
Picture **5**, 181

Ambush means a lying in wait, in order to take an enemy by surprise. An ambush may be arranged among bushes (as the word implies) or in any place from which escape is difficult

America, named after Amerigo Vespucci (1451 1512), the Italian navigator, forms two of the world's continents, North America and South America (*q.v.*) The total area of America is nearly 16 million square miles and its population is probably about 280 millions. The various countries which make up this western hemisphere will be found under their distinctive names.

American Big-horn. See *Rocky Mountain Goat*

American Black Bear. See *Bear, Black.*

American Blight shows itself in apple trees in the form of a sticky, cottony substance. Its other name is woolly aphis, the insects that make the deposits being aphides

American Bull-frog. A species of large frog noted for its loud croaking noise.
Picture **1**, 154

American Cactus is another name for the plant Prickly Pear, **1**, 335

American Civil War (1861–1865) was fought between the Union (the northern and anti-slavery states) and the Confederacy (the states of the south where Negro slaves were widely employed on the plantations). The Union forces were led to victory by Abraham Lincoln, President of the U.S.A., who was assassinated on the day peace was proclaimed, **2**, 412; **4**, 262

American Cloth is a light canvas material impregnated with oil and finished with a coating of hard varnish.

American Fall, of Niagara, is 167 ft. in height, **3**, 192

American Holly. A variety of holly growing in America which makes a forest tree 60 ft. in height.

American Independence, War of. See *Independence, War of American*.

American Indians. See *Red Indians*.

American Ostrich. Name given to the Rhea (*q.v.*).

American Rattlesnake. See *Rattlesnake, American*.

Amersham is a small town of Buckinghamshire, mainly residential.
Picture: **7**, 319

Amesbury. An ancient town of Wiltshire, named after the Roman Ambrosius. Close at hand is the historic circle of Stonehenge.

Amethyst, H.M.S. A Royal Navy frigate which was severely damaged by Chinese Communist guns in the Yangtse River. The crew repaired the vessel and against heavy odds the *Amethyst* made the dash down the 140 miles of river, despite gunfire, currents, sandbanks and other hazards, reaching Hong Kong safely on August 3rd, 1949. A great reception was accorded to the frigate and her crew on her return to England in November, 1949.

Amherst's Pheasant. A bird of rich gaudy plumage found in China.
Picture: **1**, 169

A.M.I.C.E. means an Associate Member of the Institution of Civil Engineers.

A.M.I.E.E. means an Associate Member of the Institute of Electrical Engineers.

Amiens, standing on the River Somme is capital of the Somme department of France. It is interested in textile industries and is famous for its cathedral, **2**, 240

Amiens, Peace of (1802), was no more than a short break in the long war against Napoleon. Before all its terms were carried out, France and Britain were at war again (1803), **2**, 198, 410

Amirantes is the name of a group of islands in the Indian Ocean just south of the Seychelles.

Amlwch is a seaport and holiday resort of the Island of Anglesey, **3**, 102

Amman. The capital of the Hashemite Kingdom of the Jordan. See *Transjordan*, **2**, 386

Ammonia (NH_3) is a very strong-smelling gas, which is a compound of nitrogen and hydrogen. The gas can be produced artificially in several ways. Water charged with ammonia is called liquid ammonia, or spirits of hartshorn.

—sulphate of ammonia is a valuable fertiliser, **6**, 17

Ammonite. A mollusc found in salt water and now extinct. It was allied to the Nautilus (*q.v.*).
Picture: **1**, 11

Amoeba (*pron.* Ameba). One of the lowest forms of animal life, some so minute that they can only be seen under the microscope; others can just be observed by the naked eye. They belong to the Protozoa group. It has no eyes or mouth and takes its food by flowing round diatoms and vegetable matter in the water in which it lives. When fully grown the amoeba splits in two and forms two in place of one. Some species of amoeba when present in water used for drinking cause disease.

Amp. means ampere, a term used in connection with electricity; it is the unit of electric current.

Ampelopsis. Name of a family of creeping plants. The Virginian Creeper is an example, **1**, 345

Ampere, André Marie (1775–1836). The unit of strength of an electric current is named after him. In his studies he identified electricity and magnetism, **7**, 368

Amphibian. A creature able to live on land and in the water. Frogs, toads and newts (*q.v.*) are examples, **1**, 162

Amplifier is the name given to an electric device for increasing the strength of wireless signals. It consists of two or more valves and transformers.

Ampthill. A small town of Bedfordshire, a few miles from Bedford

Amritsar is a city of the East Punjab, in the Dominion of India. It has textile industries and is the most holy city of the Sikhs, **3**, 337
Pictures: **3**, 331, 339.

Amsterdam is the chief commercial city of Holland. It is a centre of diamond cutting, tobacco manufacture and other industries, **4**, 31
Pictures: **4**, 27, 28

Amulius. Brother of Numitor, king of a small state in the country we now call Italy, **2**, 47

Amundsen, Captain Roald (1872–1928). A Norwegian explorer, he discovered the South Pole. He lost his life in an attempt to rescue castaways in the Arctic, **2**, 365, 375, 412
Pictures: The North-West Passage, **2**, 219
The Fram—Farthest North and Farthest South, **2**, 355
At Supper on the Fram, **2**, 356
Winning a Way to the Pole, **2**, 367
A Ship of the Antarctic, **2**, 371
Taking their Observations, **2**, 372

Amur. A river in Asian Russia, its total length is 2,600 miles.

Anaconda. A large snake found in South America; related to the boa constrictor, **1**, 141; **2**, 341
Picture: **2**, 340

Anæsthetic is a drug or gas which causes loss of consciousness or loss of feeling. Chloroform and ether are the anæsthetics used to make a patient quite unconscious before an operation, **7**, 382

Anafarta Ridge. A key position in the Gallipoli campaign in the war of 1914–18 which was successfully defended by Mustapha Kemal Bey (later Kemal Ataturk, the maker of modern Turkey), **2**, 237

Anagrams are sentences or words formed by re-arranging the letters of other sentences or words, *i.e.*, Horatio Nelson, "Honor est a Nilo." (Honour comes from the Nile.)

—An anagram once published by Galileo was, when solved, the announcement of an important astronomical discovery, **8**, 141

Analyse means to break up into elements or parts. The process of analysing is used by chemists to find out of what a substance is composed.

Anarchy means the absence of government or lawlessness. An anarchist is one who wishes to get rid of all forms of government.

Anatolia is modern Turkey in Asia.

Anatomy means the art of cutting up a body to discover the nature and positions of its parts. From this first meaning we get the second—the structure of a body. Medical students go through a course of anatomy.

Anaxagoras (about 500 B.C.). One of the philosophers of Ancient Greece. He thought the Milky Way was a shadow of the earth in the sky, **8**, 178

Ancestor means one from whom a person is descended; a forefather. The word may be translated, literally, as "one who goes before."

Anchor Chains for ships may be a quarter of a mile in length and weigh 50,000 lbs. In Canada and elsewhere they are welded electrically on mass-production lines, **3**, 196

Anchors are massive implements of iron or steel attached to heavy chains and lowered to the bed of the water to hold ships at their anchorage. (*p.h.*)

Anchovy. A very small fish of the herring family found in vast numbers in the Mediterranean.

Anchusa is a popular perennial plant bearing blue flowers. Much favoured by bees, **8**, 278

Ancre is the name of a river of Northern France. It empties into the Somme.

Andalusia is a large district of Southern Spain famous for its wines and oranges, through it flows the River Guadalquivir, **4**, 135 *et seq.*

Andaman and Nicobar Islands. These islands lie in the Bay of Bengal and now rank as a province of the Dominion of India. They have valuable forests and produce coconuts, coffee, and rubber as well. Port Blair is the main anchorage of the Andamans and this place is also the provincial capital. During the war the Andaman Islands were taken by the Japanese, **2**, 252

Anderida Silva was the name given by the Romans to the Weald of Kent and Sussex, **3**, 34

Andersen, Hans Christian (1805–75). Well-known Danish writer. About 1835 he began to write the Fairy Tales which made him famous, **4**, 47; **7**, 211

Anderson, Alexander. He accompanied Mungo Park on his exploration of the Niger, **2**, 324

Anderson's Creek is near Melbourne,

ARMOUR OF OLDEN DAYS



Specially drawn for this work.

Although during recent wars steel helmets have come into use again, it may be said that the introduction of firearms robbed body armour of most of the value which it had when only swords, arrows, axes, lances and darts were to be feared. *Armour* (see p. 20) reached its fullest development during the Middle Ages, when knights were encased in it from head to feet and hands (as illustrated by the central figure of this picture), and even their chargers were well protected. Then a decline set in, as gunpowder and weapons for using it became more efficient; and by the time of Cromwell only the helmet and corslet survived.

. Victoria, in the Commonwealth of Australia, and was a scene of early gold discoveries in the island continent, **3**, 204

Anderson, O. A. (Captain). An American officer who, with Capt. A. W. Stevens, set up a record in 1935 for balloon ascents, reaching a height of nearly 14 miles, **5**, 189

Andes is the name given to the great mountain range of South America. The chain is about 4,000 miles in length, **2**, 346; **4**, 320 *et seq.*, 331 *et seq.*
Pictures: The Sign of the Cross, **4**, 327
A Llama Pack Train in Peru, **4**, 330
On one of the World's Highest Railways, **4**, 331

Andorra. A small and independent state in the Pyrenees. Its proper name is the Valleys of Andorra. Its capital is called Andorra-the-Ancient, **4**, 167
Picture: **4**, 167

Andover. A town of Hampshire, the centre of a large agricultural district.

Andredsweald was the name given by the Saxons to the Weald of Kent and Sussex, **3**, 34

Andree, Salomon August (1854 97) A Swedish balloonist. He made a dash for the North Pole in a specially prepared balloon, but lost his life in the attempt (1897), **2**, 361

Andrew of Greece, Prince. Husband of Princess Alice of Battenberg and father of H.R.H. the Duke of Edinburgh. He died in 1944, **2**, 265

Andrew, St., was one of the Apostles, and is the Patron Saint of Scotland, **9**, 330

Andromache was the widow of Hector, chief defender of Troy against the Greeks.
Picture: **7**, 119

Andromeda is the name of a star group or constellation.

Andros is the largest of the Bahama Islands in the West Indies. It is noted for its sponges.

Androsace. Pretty rockery plant known as rock jessamine.

Anemometer. An appliance used for measuring the pressure or velocity of the wind.
Picture: Wind Velocity Head, **5**, 14

Anemone. A large family of garden plants. A. Japonica is a popular perennial for the autumn border, **8**, 280

Anemones, Sea. See *Sea Anemones.*

Anemones, Wood. See *Wood Anemones.*

Aneroid. Name of a type of barometer which registers the pressure of the atmosphere by means of variations on a cylindrical metal box, which is partly exhausted by air. This operates levers which work the pointer on the ordinary "weather-glass." It was invented by a Frenchman in 1847.

Angel was the name given to an early English gold coin. It was worth from 6s. 8d. to 10s., **8**, 296.

Angel Fish. Brilliantly coloured, this fish inhabits tropic seas.
Picture: **1**, 226
Colour Plate: **1**, *facing* 204

Angel Glacier is a glacier of Mount Edith Cavell in Jasper National Park, Alberta, Canada.
Colour Plate: In Canada's Greatest National Park, **3**, *facing* 196

Angelica is a biennial herb Stems and stalks are crystallised and used for the decoration of confectionery.

Angelico, Fra (1387-1455). His first name was Giovanni da Fiesole but he changed it when he became a monk. He was a great painter of sacred subjects, **7**, 4
Picture: Five Hundred Years Ago, **7**, 4

Angelo, Michael See *Michael Angelo.*

Angels' Tears is the name of a variety of miniature daffodil suitable for the rockery.

Angkor Thom was the walled city of the Khmer people whose remarkable ruins can still be seen in Indo-China, **4**, 212

Angkor Vat is one of the ancient temples of Indo-China. It was built by the Khmer people about whom very little is known, **4**, 212
Pictures **4**, 213

Angler Fish. Found in Australian waters, this fish has "rod, line, and bait" dangling from its mouth, **1**, 226

Angles. The name of European tribes that settled in this country From this comes Angle-land, or England, **2**, 83, 403

Anglesey. One of the counties of Wales and an island separated from the mainland by the Menai Strait. The port of Holyhead is on Anglesey, as is Beaumaris, **3**, 102
Picture A Beacon for the Irish Sea, **3**, 103

Angling. The Angler's Art is that of fishing with rod and line, and the word "angling" is particularly used to indicate a sport and recreation rather than the catching of fish for commercial purposes. The various methods as well as the equipment required are described in *The Angler's Art*, **8**, 245 *et seq*
Pictures Fishing for Trout at Flatford Bridge, **8**, 245
Young Anglers at Seven Islands Pond, **8**, 247
Youthful Competitors, **8**, 248
Rod and Line in London's Suburbs, **8**, 249
Tying the Hook, Different Types of Float, **8**, 250
Tackle used in Sea Angling, **8**, 251
How to Tie Securely, **8**, 251
How to Cast when Bait-fishing, **8**, 252
Baits used when Spinning, **8**, 253
The Art of Casting, **8**, 254
Angling Items, **8**, 255
Sea Angling from a Boat, **8**, 256
Along a South-Coast Beach, **8**, 257

Angling- Close seasons. There are close seasons for angling depending on the different kinds of fishing and to some extent on dates fixed by the local authorities, **8**, 246

Angling, Sea. Sea Angling requires somewhat different tackle and methods from those used for fishing in inland waters, **8**, 256
Pictures: Tackle used in Sea Angling, **8**, 251
Sea Angling from a Boat, **8**, 256

Anglo-Egyptian Sudan. This consists of a broad expanse of Africa bordered in the north by Egypt; in the south-east by Eritrea and Abyssinia, and in the west by French African territories. As its name suggests, this great territory is an Egyptian and British condominium, *i.e.* it is ruled jointly by these two countries. Khartoum is the capital. Nearly all the world's gum arabic comes from the Sudan which also produces cotton, various valuable woods, and gold, **4**, 197, 378
— the rising of the Dervishes, **2**, 222

Anglo-Nubian. Name of a variety of domestic goat which has a high yield of milk, **8**, 319

Anglo-Saxon Chronicle. A record of national affairs started by Alfred the Great. It was kept chained to a desk in Winchester Minster, **2**, 87

Angmagssalik. A settlement of the Eskimos on the shore of Greenland, **2**, 364

Angola. A territory of Africa constituting Portuguese West Africa. It occupies an area of more than 480,000 square miles south of the Belgian Congo and has a coast line over a thousand miles in length. The capital is Sao Paulo de Luanda. Crops such as coffee, maize, and palm oil are produced, and there are very valuable deposits of diamonds, **3**, 275

Angora. See *Ankara*

Angora Goat. An animal found in eastern countries. When domesticated, its long silky hair is shorn and woven into the fabric known as mohair

Angora Rabbit. A variety of this rodent animal kept solely for its wool, **8**, 322

Anguloa. A section of the orchid family. It takes its name from Angulo, a Spanish collector.
Picture **1**, 365

Angus is a county of eastern Scotland formerly known as Forfarshire. Its county town is Forfar, but it includes Dundee and Arbroath

Anhwei. A province of central China through which flows the Yangtze river. Hwaiming (Anking) is the provincial capital, **4**, 241

Animalcule. A very tiny form of animal, too small to be seen without a microscope. Water in ponds is full of animalcules.

Animal Friends. How best to take photographs of them, **8**, 268
Pictures: **8**, 268

Animal Life in all probability first appeared on the earth in the shallow waters near the shore, and the story of their evolution is told in *Animal Life Appears on the Earth*, **1**, 11 *et seq.*
Picture: A Genealogical Tree of Animals, **10**, 9
The key to this Tree is as follows: 1. A plant, indicative of the Vegetable Kingdom. 2 and 3. Chalk-forming animals. 4. Parasitic Gregarine. 5. The Night-light Infusorian, Noctiluca. 6. The Bell-Animalcule, Vorticella. All these are Protozoa, unicellular animals. Multicellular animals are called Metazoa. 7. Crumb-of-Bread Sponge. 8. A Sea-Anemone and 9. Jellyfish. 10. Leech. 11. Earthworm. 12. Brittlestar. 13. Lobster (Crustacea). 14. Butterfly (Insects), Scorpion (Arachnids). 16. Snail and 17. Cuttlefish (Molluscs).

18. Balanoglussus (intermediate between Invertebrates and Vertebrates). Then the Vertebrates: 19. A Sea-Squirt or Tunicate. 20. Lancelet. 21. Shark (Fishes). 22. Frog (Amphibians). 23. Chameleon (Lizard order of Reptiles). 24. Snake (another type of Reptile). 25. Swallow, and 26. Rook (Birds). 27. Bat, and 28. Squirrels (Mammals).

Animals and Birds. Four-footed and other Friends in the Home and How to House and Feed them, **8**, 259 *et seq.*

—Animal Stories for Boys and Girls, **7**, 274

Animals and Their Young. An interesting study in natural history.
Pictures. Giraffe ; Hippopotamus, **1**, 61
Malayan Tapir ; Zebra, **1**, 60

Animals in Armour. Alligator, crocodile, tortoise, turtle, armadillo, anteater, etc., **1**, 113 *et seq.*

Anis. This is the name for the stone huts built by the Eskimos for use in winter. Turves as well as stones are used, **3**, 163

Anjou is a province of western central France. It was once ruled by Counts, among whom was Fulk the Black, **4**, 13

Ankara is the capital of Turkey. It is in Anatolia and though much smaller than Istanbul the former capital, contains modern roads and buildings, **4**, 159
Pictures: Turkey's Modern Chief City, **4**, 163
Ankara, Turkey's Modern Capital, **4**, 164

Ankaratra is an extinct volcano of the island of Madagascar rising to a height of about 9,000 ft.

Anna was the name of one of the ships in Anson's squadron, **2**, 319

Annalong. A small port in County Down, Ireland. It is overlooked by the famous Mountains of Mourne (*q.v.*).
Picture: **3**, 147

Annam is a part of Indo-China. It was formerly a French protectorate and is now a part of the Viet-Nam Republic. Its people are chiefly Annamites and its main product is rice, **4**, 212

Annan is the name of a river of Dumfriesshire. It flows into Solway Firth, **3**, 112

Annan. A royal municipal burgh and seaport of Dumfriesshire with fishing interests. It stands on the River Annan about 1½ miles from its mouth.

Annapolis, a seaport, is the capital of the State of Maryland, U.S.A.

Annapolis, Nova Scotia. This was the site of the first settlement in Canada, established there by De Champlain in 1604. The Annapolis Valley is now an important apple orchard district, **3**, 155, 181
Picture. **3**, 181

Annapurna. One of the highest peaks of the Himalayas, 26,496 ft. high. It was climbed by two French mountaineers in 1950.

Anne (1665-1714). Queen of Great Britain and Ireland. She was the younger daughter of James II, **2**, 173 ***et seq.***, 408

Anneal means to render metal and glass less brittle by prolonged, slow cooling after heating.

Annecy is the chief town of the department of Haute Savoie in France. It stands at the northern end of the lake of the same name.
Picture: **4**, 16

Anniversary is the yearly return of the day on which an event took place. What is called a birthday is the anniversary of the day of a person's birth.

Annually means year by year; once a year. The accounts of a company or firm are made up annually. Events taking place once in every two years occur biennially, and if they come in every third year they occur triennially.

Annuals are plants of annual duration, *i.e.* the seed is usually sown in the spring or early summer and the plants die when they have finished blooming. There are two distinct types—the hardy annual (*h.a.* for short) and the *half-hardy* annual (*h.h.a.*), **8**, 277

Annulus is a Latin word for the narrow ring left on the sun's surface during an annular solar eclipse, **8**, 124
Picture. **8**, 126

Annular Eclipse of the Sun is an eclipse when nearly the whole of the sun is covered by the dark body of the moon, with an uneclipsed ring of sunlight, **8**, 124
Picture: **8**, 126

Anon means anonymous, *i.e.*, without any name. In newspapers letters are sometimes signed "Anon," and so are many poems.
Poems To the Lady-Bird, **9**, 96
There Was an Old Woman, **9**, 108
Mr. Nobody, **9**, 112

Anson, George, Lord (1697–1762) Entered the British Navy in 1712 and reached the rank of Admiral. Famous for his voyage round the world, **2**, 317 *et seq.*
Pictures: After Rounding Cape Horn, **2**, 317
Getting the Sick Ashore, **2**, 318
A Ship Destroyed, **2**, 319
The Spaniard Gives In, **2**, 321

Anstey, F. (Thomas Anstey Guthrie, 1856-1933). Author of the story *Vice-Versa*, in which father and son change bodies but not minds, **7**, 252

Ant. An insect of the same family group of the order Hymenoptera (membrane-winged) to which bees and wasps belong. They are regarded as the most intelligent among insects. About 3,500 species are known, and a certain number are winged. They are social in habit and live in nests of different types. The three classes in the nest are queens, males and workers, **1**, 268 *et seq.*
Pictures: Ants at Work, **1**, 270
Ants Keep Their Own Cows, **1**, 271
Queen or Winged Ant, **1**, 271
Wood Ants' Nest, **1**, 271

Ant. The Norfolk river of this name forms part of the Broads.

Antananarrivo is the capital of the French island of Madagascar.

Antarctica is the name given to the continent surrounding the South Pole. It has only been partially explored and is covered with ice. Captain Cook knew of its existence, **2**, 314

—the story of its exploration is told in Heroes of the Antarctic, **2**, 366 *et seq.*

—Australia is responsible for about half Antarctica, **3**, 244
Pictures: Within the Antarctic Circle, **2**, 366
Winning a Way to the Pole, **2**, 367
Captain Oates and his Ponies, **2**, 368
The Freezing of the Sea, **2**, 369
Capt. Scott writing up his Journal, **2**, 370
A Ship of the Antarctic, **2**, 371
Taking their Observations, **2**, 372
"Scott of the Antarctic," **2**, 373
Landmarks across the Ice Field, **2**, 374
Fast amid Ice Boulders, **2**, 375
The End of a Gallant Ship, **2**, 377
Into the Blizzard of Death, **2**, 378
Photo-tone Supplement: In the Polar Regions, **2**, *between* 368 *and* 369

Antarctic Circle. The Antarctic Circle is the parallel of 66½° S. and embraces all areas within 23½° of the South Pole, **2**, 314, 366

Antarctic Expedition, English (1840-42) was commanded by Sir James Clark Ross, **2**, 366

Ant-eater. See *Echidna, Great Ant-eater, Scaly Ant-eater.*

Antelope. Deer-like animal with horns, belonging to the Old World. The prong-horn antelope is the only member of the family found in America.

Antennæ. Feelers to be found growing on the heads of certain insects, lobsters and crabs, ants and other creatures.
Picture. **1**, 242

Antennary is an adjective relating to an antenna. The antennary nerves of an insect are at the roots of the antennæ or feelers projecting from its head.

Anthers. The heads or tops of the stamens in flowers. Anthers hold the pollen-dust necessary for seed-making, **1**, 296

Ant-Hill. Name given to an ant's nest, which may go a foot below ground and have many passages and rooms. In some countries these ant-hills may reach enormous size, **1**, 268
Pictures: Ant-hills on Cemetery Plain, Australia, **3**, 223
A City of the Ants, **3**, 300

Anthony, St., of Padua (1195-1231). One of the early great preachers, he was appointed an instructor by St. Francis. He was regarded as the friend of all animals.

Anthracite is the name given to a type of coal that is almost smokeless as it burns, **3**, 94

Anthrax is a disease which attacks man, horses, cattle and sheep. It may take the form of ulcers on the skin and a swelling of the glands.

Anthropoid Apes is the name given to those monkeys that are most like man in form.

Antibes is a town of the French Riviera. It is a centre for perfume manufacture.

Anti-Comintern Pact (1936). This agreement was originally between Germany and Japan, but later Italy adhered to it. It was called the Anti-Comintern Pact because it was

direct against the Comintern (Communist International), **2**, 245

Anti-cyclone. Name given by meteorologists to a great centre of high pressure, **5**, 22

Antidote is the name given to a substance which neutralises a poison. The antidotes for certain poisons are given in **8**, 244

Antigua. See *La Antigua.*

Antilles is the name of two groups of islands in the West Indies. See *Greater Antilles* and *Lesser Antilles*, **4**, 388, 389

Antimony is a bluish-white, very brittle metal and one of the elements, symbol Sb. Unlike most other metals, antimony expands, instead of contracting, as it cools. It is used in the manufacture of metal, **6**, 128

Antioch is a city of the republic of Syria. It is an ancient cradle of Christianity, and it was here that the followers of Christ were first called Christians, **4**, 190

Antipater of Sidon. A great general of olden times associated with the Phœnician city of Sidon. He made out the list of the Seven Wonders of the Ancient World, **7**, 290

Antirrhinum. A well-known half-hardy annual plant in various colours; also known as the Snapdragon, **8**, 278

—its landing platform for insects, **1**, 292

—where it grows wild, **1**, 338

Pictures: Bee in the Blossom, **1**, 297
Some Flower Garden Favourites, **8**, 275

Antiseptic means a preparation that will prevent germs from spreading. Milton, Izal and Monsol are examples, **7**, 38. **8**, 234

Anti-slavery Society, founded 1839 to abolish slavery within the British Empire. Gave a panel to the Livingstone Memorial.
Picture. **2**, 334

Anti-toxin is a protective substance in our blood. It destroys the poisons with which germs may attack us, **8**, 216

Antlers. The bony horns which form on the heads of stags. Antlers are renewed every year, **1**, 103
Pictures: **1**, 103, 105

Ant-lions have large wings and are not unlike dragon flies. The insects are found in tropical countries.

Antofagasta is a province of Chile. Its chief town, of the same name, is a great nitrate port, **4**, 321

Antofagasta and Bolivia Railway. The highest railway in the world, **5**, 137

Antonius, Marcus (Mark Antony) (83–30 B.C.). In the year 44 B.C. he was Consul with Julius Cæsar. With Octavian and Lepidus he assumed great power on the death of Cæsar, **2**, 402

Antonym. A word which has the opposite meaning to another, as *good—bad; love—hate*, **8**, 206

Antrim is one of the six counties of Northern Ireland. It has wide farming interests and many manufactures, including linen. Its coast is very rugged.
Antrim is also the name of the county town, a centre for linen.
Picture: **3**, 141

Antrycide. Name given to a drug, discovered by a team of scientists led by Dr. D. G. Davey and Dr. F. H. S. Curd, research chemists of Imperial Chemical Industries, which is a cure and protection against cattle disease caused by the tsetse-fly. This disease has hitherto made vast areas of Africa uninhabitable by man or beast. Cattle-breeding is now a practicable proposition in African and other tropical areas, **7**, 416

Ants' Cows. Name sometimes given to green fly or aphides from which the field ant obtains a sweet liquid, **1**, 270
Picture: **1**, 271

Ants' Eggs. Name wrongly given to ant cocoons, with which goldfish are often fed, **1**, 268, 270

Ants, Leaf-cutting. They cut up leaves to make a leaf-mould which produces their food, **1**, 353

Antwerp is (1) a province of Belgium; (2) the chief town of that province. It is Belgium's first seaport and stands on the estuary of the River Scheldt. Mail steamers run regularly between Antwerp and Harwich, **3**, 59; **4**, 19, 26

—its liberation during the Second World War, **2**, 256

Ants, White. See *Termites.*

Anuradhapura. An ancient and sacred city in Ceylon where can be seen the sacred bo-tree, **3**, 367, 368
Picture: A Temple Two Thousand Years Old, **3**, 367

Anvil. A block of iron with a flat steel surface upon which the metals are forged or wrought by the smith, such as the blacksmith, goldsmith and other workers in metal. (*p.h*)

Anzac. This term means the Australian-New Zealand Army Corps which fought in the Gallipoli campaign of the First World War and is also used to denote a member of that corps, **2**, 236

A.O.F. means Ancient Order of Foresters.

Aorangi, the "cloud piercer" is the name Maoris give to Mount Cook in the South Island of New Zealand, **3**, 254
Picture: **3**, 253

Aorta. The great artery through which the heart discharges blood into the arteries of the body, except those leading to the lungs.

Apaches form a prominent tribe of Red Indians. The name is also given to hooligan terrorists of Paris.

Apapa is a port of Nigeria. It is a sister-port of Lagos and Iddo.
Picture: **4**, 379

Ape and Monkey. The story of the animals that are most like man in form, **1**, 98 *et seq.*
Pictures: Baboons, **1**, 98, 99
Gorilla, **1**, 99
Orang-utan, **1**, 100
Langur, **1**, 101
Spider monkey, **1**, 101
Macaque, **1**, 102
White-thighed colobus, **1**, 102
Photo-tone supplement: Monkeys and their ways, **1**, *between* 96 *and* 97

Apelles (4th century, B.C.) ranks as the greatest of Greek painters. He gave the well-known advice "let the cobbler stick to his last," **7**, 1

Apennines. A great mountain chain running down Italy and appearing in Sicily, **4**, 150

Apex is a Latin word meaning originally the little rod projecting from the top of a priest's cap. We use it to signify the summit or tip.

Aphides. Name given to insects which prey upon the stems and other parts of plants, *e.g.*, greenfly. Singular, aphis.
Picture: **1**, 271

Aphrodite, in the Greek legends, was the goddess of love, **5**, 359

A.P.M. means Assistant Provost-Marshal.

Apocalypse means a revelation or unveiling. The word is most often used of the Revelation of St. John, the last book of the Bible.

Apollo was one of the Greek gods with various attributes. He was a warrior and the protector of shepherds and flocks, a musician and a patron of youth. His statue—the Apollo-Belvedere—found in the ruins of Antium, represents him as a being of perfect physical beauty. Apollo was represented in ancient art more frequently than any other deity, **5**, 351; **9**, 19

Apollonius (of Tyana) Born just before the Christian era, he became one of the most celebrated of the Greek philosophers

Apostle means one sent forth; a messenger. With a capital letter the word implies one of the twelve disciples chosen by Christ.

Apothecary is the name given to a dealer in drugs; a pharmaceutical chemist. In olden days an apothecary, besides supplying medicines, acted as doctor and surgeon. Medical prescriptions make use of apothecaries' weight.

Appalachian Ridges. This is the name given to a range of Highlands of the U.S.A. which runs for some 1,500 miles down the Atlantic coast, **3**, 160; **4**, 263

Apparatus means devices required for carrying on some particular kind of work. Photographic apparatus includes cameras, lenses, printing frames, dishes, enlargers, etc.

Appendage is the name given to something hanging from or attached to a larger part. Animals' tails, tassels, ear-rings and beards are various forms of appendage.

Appian Way. Name of a famous trunk road built 300 years before the time of Christ. It led from Rome to the east, **4**, 154
Pictures: Along the Appian Way, **4**, 144
As the Road is To-day, **5**, 35

Appius Claudius, the Roman leader who built the Appian Way, beginning in the year 312 B.C.
Pictures: Along the Appian Way, **4**, 144
The Appian Way To-day, **5**, 35

Apple. Fruit of the Pyrus malus, a tree of the Roseaceæ family. It has been known as a valuable food plant in European countries for many centuries, and there are now some thousands of different varieties, grown in all continents, and broadly divided into three main categories; cooking, eating, and cider apples. (*p.h.*)

Appleton, Sir Edward Victor (born 1892). A distinguished scientist whose discovery of the "Appleton Layer" has had great influence on radio progress. Awarded Nobel Prize for Physics 1947 and became Principal of Edinburgh University in 1948.

Appleby, standing on the River Eden, is the county town of Westmorland and a popular tourist centre.

Apple, Custard. See *Custard Apple.*

Appliance means a tool, instrument, apparatus or other thing used in doing work of a certain kind. A surgeon uses many different surgical appliances.

Apprentices are persons bound for a term of years to serve a master, who has to teach them his trade. The apprenticeship system for the learning of skilled trades was established in England as early as the thirteenth century.

Apricots (*Primus Armeniaca*) are plum-like fruits of a golden colour, similar to the Peach in character.

April 23rd. St. George's Day. Anniversary of British Naval Attack on Zeebrugge, 1918. Date of Shakespeare's death, 1616.

Aptitude Tests are tests which are devised by psychologists in order to ascertain the capacity of individuals in various directions, **6,** 413

Apulia is a district of Southern Italy running down the "heel" of that country. Here is grown the wheat from which macaroni is manufactured and one can see it on drying frames, **4,** 152

Aquarium. A tank to hold water for fish or aquatic plants; a building in which such tanks are collected. There is a splendid aquarium at the London Zoological Gardens and another at Brighton.
A small aquarium is the most suitable home for goldfish, **8,** 319
Picture: What a (goldfish) aquarium looks like, **8,** 321

Aquarius, the Water Bearer. One of the Signs of the Zodiac Also the name of a star constellation.

Aqueduct is the name given to a channel formed for conveying water. The Romans built many aqueducts to carry water across deep valleys, **4,** 14. See also *The Water We Drink,* **6,** 236 *et seq.*
Picture: **4,** 136

Aquila (the Eagle) is the name of a group or constellation of the stars.

Aquilegia. Popular perennial plant commonly known as Columbine.

Aquitaine. An old duchy of France, originally occupying the south-western part of that country. It was here that the Visigoths settled after the fall of the Roman Empire, **2,** 102; **4,** 5

Aquitania is one of the older vessels of the Cunard White Star Line. She was launched in 1914 and finished her sea service in December 1949.
Picture: **5,** 261

A.R.A. means an Associate of the Royal Academy.

Arab Horses are said to be the swiftest of all such animals and there is Arab blood in most of our racehorses, **1,** 96

Arabia is a large and mainly desert country lying between the Red Sea and the Persian Gulf. Sheep, camels, and cattle are raised by its people who grow crops, including dates and figs, in the fertile regions. Its horses have always been famous. Oil is among the most recent of its products. It is divided into a number of states, the largest being Saudi Arabia (*q.v.*). See also *Yemen, Hadhramaut, Bahrein, Muscat and Oman, Kuwait,* and the *Trucial Sheikhdoms,* **4,** 204 *et seq.*

Arabia, Lawrence of. See *Lawrence,* Colonel Thomas Edward.

Arabian Nights' Entertainments. Title of a collection of stories from the East closely identified with the city of Baghdad, **4,** 200. See also *Sindbad the Sailor.*

Arabian Sea is the name given to a large portion of the Indian Ocean. It lies between the Indian shore and the coast of North Africa.

Arabis, popular rockery and edging plant known as "Snow-on-the-Mountain."

Arable is an agricultural term. An arable farm is one where much of the land is ploughed, the opposite being a grass farm, **6,** 379

Arakan Temple is one of the sights of Mandalay, in Burma, **3,** 222

A.R.A.M. means an Associate of the Royal Academy of Music.

Aran is a peak of Snowdonia, 2,451 ft in height, **3,** 103

Aran is the name given to a group of three islands to the west of Galway Bay, Eire.

Arapuni is the name of a great power station on the Waikato River of New Zealand, **3,** 264

Ararat is a mountain of Armenia. It has two peaks. Tradition names the mountain as the resting-place of the Ark after the Flood.

Araucaria. The Monkey Puzzle tree or Chili Pine. Named after Arauco, the district of Chili in which it grows in forests. The seeds are used for human food.

Araugia Albens. A plant growing in Central Africa. At the base of the flower cup are strong pincers which are used for trapping moths, **1,** 340

Aravalli Hills. Name of a range of mountains in India, **3,** 332

Arazuma was a centre of Mexican silver-mining. Huge nuggets of pure metal were here won from the ground, **6,** 102

Arbalest. Name of a military engine used in the early days of history. It hurled spears against the enemy during battle. (Also spelt *Arbalast.*)

Arbitration Cove is an inlet of Koolan island, one of the great iron ore centres of Yampi Sound, Western Australia, **3,** 239

Arboretum. A garden or place set apart for the cultivation of trees.

Arbroath is a town and seaport of Angus, Scotland. It is also a manufacturing centre.

Arbutus. See *Strawberry Tree.*

Arc is part of a circle or other curved line. The sun describes a larger arc through the heavens during the summer than in the winter. If a small break is made in a conductor through which a strong current is flowing, what is called an electric arc is formed in the gap.

Arc de Triomphe in Paris, built to commemorate the conquests of Napoleon, is the largest arch of its kind in existence, **4,** 12
Picture: **4,** 8
Photo-tone Supplement: On the Seine and the Rhone, **4,** *between* 112 *and* 113

Arc, Joan of. See *Joan of Arc.*

Archæologists are persons interested in archæology, the study of old and prehistoric objects. It is largely to the archæologists that we owe our knowledge of past civilisations. Discoveries in Mesopotamia, Egypt and other lands have enabled the historian to learn how these bygone people lived and worked. Excavations in the present century have brought to light ancient cities and the tombs of kings. See *Great Nations of the Past,* **9,** 1
Photo-tone Supplement: Treasures of the Past, **9,** *between* 16 *and* 17

Archæopteryx, a prehistoric long-tailed bird.
Picture: **1,** 20
Colour Plate: **1,** *facing* 37

Archangel is a large province to the north of Russia. Its capital is a town of the same name, the great port of the White Sea.

Archdruid is the title of the presiding officer at an Eisteddfod (*q.v.*), **3,** 99

Archer Fish. Found in Australian waters, this fish catches insects by knocking them off overhanging branches by spitting at them, **1,** 225, 226; **3,** 248

Archery is the sport of shooting at targets with bows and arrows Targets are 3 ft. to 4 ft. in diameter and have gold centres surrounded by rings in different colours.

Arches in building were first used by the Etruscans. Norman arches are semi-circular in shape; Gothic arches pointed.
Pictures: The Norman Arch, **7,** 298 The Gothic Arch, **7,** 299

Archimago, in olden legends, was one of the chief magicians and enchanters, **5,** 398

Archimedes (287–212 B.C.) of Syracuse, the greatest mathematical genius of antiquity. His existing works include six treatises on geometry, one on arithmetic and three on mechanics, **7,** 340
Pictures: **7,** 343, 345, 346

Archipelago is the name given to a group of small islands, or to the body of water surrounding such a group. The name applies specially to the sea between Greece and Asia Minor.

Archipelago of the Aegean is the name given to the numerous small islands which lie grouped in the Aegean Sea. They form part of Greece, **4,** 157

Architecture is the art or science of building, *i.e.,* that branch of knowledge which has for its object the production of buildings, suitable for the purpose for which they are built, and also pleasing to a cultivated and artistic taste, **7,** 279 *et seq.*
Pictures: **7,** 279 *et seq.*
Photo-tone Supplement: (Modern architecture), **7,** *between* 288 *and* 289

Architecture, Orders of. These consist of the Doric, Ionic and Corinthian styles.
Pictures: 7, 291, 293; 9, 341

Architrave is the term used to describe the surround of a door, window, or other opening or recess.

Arch of Constantine, one of the finest remains of the Roman Empire, is a memorial to this great Emperor.
Picture: 4, 144

Arch of Titus can still be seen in Rome. It was built by the Emperor Domitian to commemorate the capture of Jerusalem by his predecessor, Titus, in A.D. 81.
Picture: 4, 141

Arc-lamp. A lamp which makes use of the light from an electric arc. The arc is formed by separating the tips of two carbon rods which had been touching one another.

A.R.C.O. means an Associate of the Royal College of Organists.

Arcot. A city of Madras, India. It was the scene of a British victory over the French, our forces being commanded by Clive (1751), 2, 185; 3, 320
Picture: 2, 186

Arctic Circle. The Arctic Circle is the parallel of 66½° N. and embraces all areas within 23½° of the North Pole. It is not so remote from the haunts of man as the Antarctic Circle, 2, 366

Arctic Fox. An animal of the Arctic regions found as far south as Iceland. In winter its coat is white but it changes to a bluish shade in summer.

Arctic Ocean, the smallest of the oceans, stretches round the north of Europe, Asia and America. It is linked with the Pacific by the Bering Strait. It has an area of nearly 5½ million square miles.
—the desire to open up trade routes to the East led to early attempts to explore the Arctic Ocean. Later the quest for the North Pole attracted several daring explorers. In the past few years interest has again been revived with the development of world air routes. See *The Call of the North*, 2, 355 *et seq.*
Photo-tone Supplement: In the Polar Regions, 2, *between* 368 *and* 369

Arcturus is the name of a star in the constellation or group of Bootes the Herdsman, 8, 176

Ardennes. The name of a chain of highlands running from France across southern Belgium and Luxembourg, 4, 24
Picture: 4, 26
Photo-tone Supplement: Scenes in the Low Countries, 4, *between* 112 *and* 113

Ardnacrusha, near Limerick, in Eire, is the site of the great power houses in which the Shannon is harnessed to produce electricity, 3, 142
Pictures: The Shannon in Harness, 3, 142

Ardrossan. A seaport of Ayrshire. It maintains a steamer service with Northern Ireland and is a holiday resort, 3, 121

Areca. An Indian palm-tree from which the areca nut is obtained. This nut is similar to the nutmeg.

Argelander, Friedrich Wilhelm August (1799–1875). A well-known astronomer of Germany. He made a catalogue of 324,000 stars, 8, 174

Argentina is a great republic at the south of South America. Its chief business is agriculture, stock being raised in enormous quantities. Meat, wool, butter and similar products are exported. The capital is Buenos Aires, 4, 317, 331, 392
Pictures: The Plaza de Mayo, Buenos Aires, 4, 323
The Columbus Monument, Buenos Aires, 4, 324
More Majestic than Niagara, 4, 325
The Sign of the Cross, 4, 327
Tierra del Fuego, 4, 335
British Engineers build railways Abroad, 4, 343

Argo was the name of the many-oared ship in which Jason and the heroes who accompanied him sailed in search of the Golden Fleece, according to Greek mythology. They were known as the Argonauts. (*p h.*)

Argon is an inert gas existing in small quantities in the atmosphere. It was discovered in 1894 by Lord Rayleigh and Sir William Ramsay and proved to be half as heavy again as air.

Argonaut Name of one of the molluscs. It inhabits the seas of the tropics and is like a cuttle fish in a shell. It swims by means of tentacles.

Argonne is a district of north-east France noted for its forest.

Argosy. This word means "treasure ship." It originated from the ships of the Adriatic republic of Ragusa (see *Dubrovnik*) which were called argosies and carried rich cargoes, 4, 156

Argus, having a hundred eyes, was the Watchman in ancient Greek legends, 5, 348, 350
Picture: 5, 349

Argyll is a county of West Scotland having many mountains and lochs. It also has deer forests and some of the most picturesque scenery in Scotland. The capital is Inveraray.

A.R.I.B.A. means an Associate of the Royal Institute of British Architects.

Ariel. Name of British sailing-ship which held the record Clipper run between London and Hong Kong when she did the voyage in 79 days and 21 hours, 8, 29

Ariel. The dainty, gossamer-winged fairy of English folk lore. In Shakespeare's comedy *The Tempest*, he waits on Prospero and sings the fairy songs: *Come unto these yellow sands, Full fathom five thy father lies*, and *Where the bee sucks, there suck I.* (*p.h.*)

Aries, the Ram. One of the Signs of the Zodiac. The name of a star group or constellation.

Ariosto, Ludovico (1474–1533). One of Italy's greatest poets. His outstanding work is *Orlando Furioso.*

Aristarchus of Samos (about 250 B.C.) One of the greatest of early Greek astronomers. He was perhaps the first to realise that the earth moves round the sun, 8, 114

Aristophanes (*c.* 448–380 B.C.). An Athenian who became the most brilliant writer of Greek comedies, 7, 119, 121

Aristotle (384–322 B.C.). A man with wide interests whose knowledge was profound. His was one of the greatest minds the human race has produced, 7, 146
—he was the first man to explain the phases of the moon, 8, 134

Aristotle's Lantern. Name given, because of its shape, to one of the sea urchins.

Arithmetic is the science of numbers dealing with all questions in which numbers are concerned: counting, measuring and weighing. The four processes in arithmetic are addition, subtraction, multiplication and division.
A sound knowledge of arithmetic is essential in commerce, government and in the general business of life. Some knowledge of arithmetic existed even in prehistoric times. The use of Arabic numerals in place of Roman numerals greatly simplified arithmetic in Europe; the invention of logarithms (1614), the slide-rule (1630) and later aids such as ready reckoners and calculating machines have further simplified arithmetical calculations in more recent times.
See *A Helping Hand for Tiny Folk*; *Games to Play With Figures*, etc., 9, 135–144

Arizona is one of the states of the U.S.A. Part of it is dry desert and there is large-scale irrigation. Cotton, maize and other crops are grown and there is mineral wealth. The capital is Phœnix. (Abbrev. Ariz.)
Pictorial Map. 4, 290

Ark. means Arkansas, one of the United States of America.

Arkansas is one of the States of the U.S.A. Its interests are mainly agricultural. The capital is Little Rock. (Abbrev. Ark., *pron* Arkansaw)
—it is a source of bauxite, 6, 131
Pictorial Map 4, 291

Arklow is a seaport and town of Wicklow, Eire. It stands on the River Avoca.

Arkwright, Sir Richard (1732–92). The youngest of a poor family of thirteen children, he took up the study of cotton machinery and, in 1767, invented his famous spinning-frame.

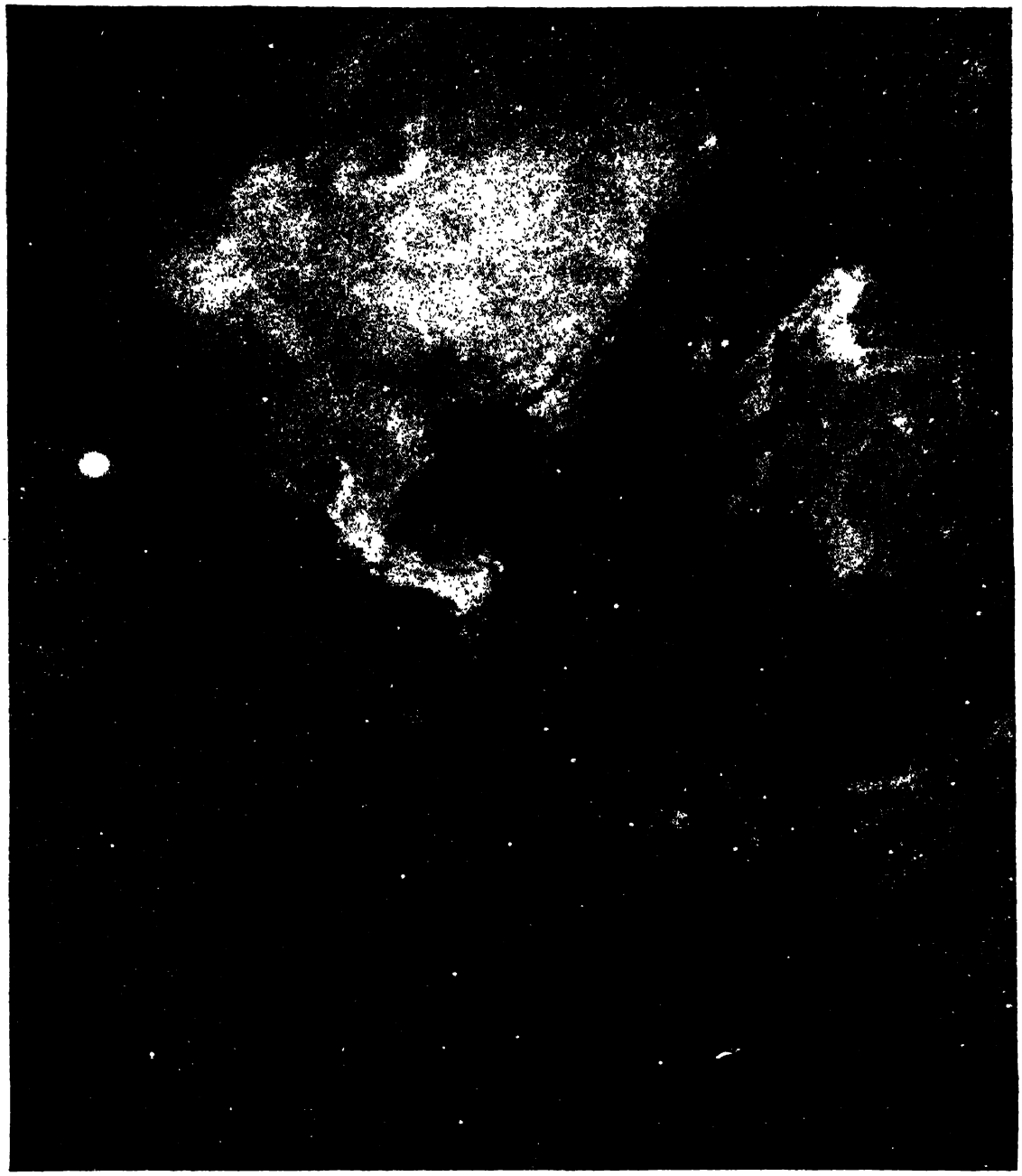
Arlberg is the name of a Pass through the Austrian Tyrol. Its height is 6,000 ft. above sea level and it joins the Brenner Pass at Innsbruck.
Pictures: 4, 88 and 89

Arlberg Pass, nearly 6,000 ft. above sea level, is a way through the Austrian Tyrol.
—it has a railway tunnel 6½ miles long, 5, 128

Arles is a town of France on the River Rhone. It has a Roman arena, 4, 14, 148

Armada, the Spanish (1588). The great expedition by which Spain hoped to humble Queen Elizabeth and England. It comprised 130 ships and 30,000 sailors and soldiers, 2, 148, 150, 406; 8, 5
Pictures: A Queen reviews her Soldiers, 2, 146
The Armada is in Sight, 2, 153

Armadillo. Making its home in South



By courtesy of the National Geographic Society Palomar Observatory Sky Survey.

The Palomar Observatory near San Diego, California, has built the largest telescope in the world and the wonderful Schmidt photo telescope to advance the science of *Astronomy* (see p. 22). In 1949 the Observatory began to take a series of 2,000 photographs of the sky, a task expected to take four years. This photograph, one of the first to be taken, shows the North American Nebula in the northern part of the Milky Way. The single bright star seen on the left is Xi Cygni, about 300 light years distant. One light year equals about six million million miles.

America, this animal lives in burrows. It has a coat of flexible plates or mail and is toothless, 1, 116
Picture: 1, 116

Armadillo Bug. Name sometimes given to the woodlouse because of its way of rolling itself into a ball.

Armagh is a county of Northern Ireland. Its two main interests are farming and the linen trade.
Armagh is the name of the county town famous for its cathedral and for linen, 3, 144

Armed Neutrality. The Armed Neutrality of the North (Russia, Denmark, and Sweden) had originally been formed in 1780 to enforce certain principles regarding the ships of neutral countries in time of war. In 1800, it was revived to withstand Britain's claim to the right of search —this being part of Napoleon's plan to defeat Britain, 2, 198

Armenia is one of the Republics that form the Soviet Union. It contains the Rivers Tigris and Euphrates and Mount Ararat. According to legend, it is the site of the Garden of Eden. The country produces timber and minerals. Its capital is Erivan.

Armeria. A perennial plant much used for edgings and for rockeries. Known popularly as *Thrift*.

Arminius. The name of a chief of the German tribe called the Cherusci. He destroyed three Roman legions in A.D. 9, 4, 72

Armistice Day is November 11th. At 11 a.m. on this date in 1918 an armistice was declared in the World War of 1914-18. In 1946 it was decided that the Sunday before Nov. 11th, unless Nov. 11th or 12th be a Sunday, should be observed as a National Day of Remembrance of the two World Wars.

Armour as a protective body-covering for soldiers was known among the Assyrians, Egyptians, Greeks and Romans and was carried on by Scandinavians, Normans and many other races. It reached its greatest heights in the fifteenth century, but the introduction of firearms robbed armour of most of its value.
The knights of the Middle Ages were encased from head to foot and some war horses carried as much as 100 lbs. of armour for their own protection. (*p.h.*)
Picture: 10, 13

Armoured Bear is a famous fountain in Berne, the capital of the Swiss Confederation.
Picture: 4, 55

Armoured Fish. See *Fish In Armour.*

Armstrong, Lord (1810–1900). Born at Newcastle-on-Tyne, he first practised as a solicitor. His plan for the improved working of a crane by hydraulic pressure was adopted for docks at Liverpool.
Inventor of an 18-pounder rifled gun, he was appointed engineer of rifled ordnance and then proceeded to the construction of warships.

Arne, Dr. Thomas Augustine (1710–78). An English musician and composer of "Rule, Britannia," as well as many operas and oratorios, 7, 158
Picture: 7, 157

Arnee Buffalo. An animal with specially long horns, sometimes 6 ft. in length, found in India.

Arnhem is a Dutch town on the River Rhine famous for the gallant stand of British airborne troops against insuperable odds (Sept. 1944), 2, 256

Arnhem Land is the name given to that part of the Northern Territory of Australia bounded on the east by the Gulf of Carpentaria and on the west by the Timor Sea. The chief town is the important air, rail, and port centre of Darwin. Arnhem Land is one of the last strongholds of the Australian aborigines, 3, 204, 222 *et seq.*

Arno is a river of Italy. It rises in the Appenines. Florence, one of the greatest art treasure-houses in the world, stands on its banks, 4, 151
Picture: 4, 140

Arnold, Sir Edwin (1820–1904). British writer. *The Light of Asia,* an epic poem on the life and teaching of Buddha, is his best-known work.

Arnold, Matthew (1822–88). An English poet, son of Dr. Arnold of Rugby.
—his opinion of France, 4, 16

Arnold, Thomas (1795-1842). Born in the Isle of Wight, he became headmaster of Rugby School. His influence on public school education was of great importance.

A.R.P. means Air Raid Precautions, one of the branches of Civil Defence forces formed during the war 1939–45, 2, 197
Pictures: The Women Wardens' Great Work, 2, 393
Boy Messenger, 2, 397

Arran is an island of the Firth of Clyde, Scotland.

Arras is the chief town in the Pas-de-Calais Department of France. It was the scene of bitter fighting in the War of 1914–18. At one time the town was so famous for its tapestries that the name came to be applied to all such hangings.

Arris Rails are lengths of wood, usually of triangular shape, employed in the construction of fences and gates.

Arrochar is a town at the north-eastern end of Loch Long in the Scottish Highlands.
Picture: 3, 129

Arrowhead. A water-plant having blade-like leaves under water and arrow-shaped leaves above, 1, 290–1

Arrowroot is the name of a starch produced from the roots of a herb of the same name. Arrowroot forms a food for delicate and invalid people and is grown in Australia and the West Indies.

A.R.S.A. means either an Associate of the Royal Scottish Academy or an Associate of the Royal Society of Arts.

Art. In its general sense the word covers a wide variety of activities concerned with the creation of something beautiful—a painting, a sculpture, a book or poem, a musical work or a fine building. These Arts, Painting and Sculpture, Poetry and Literature, Music, and Architecture, are dealt with under their separate headings referring to the sections in Volume 7 of this work.
In the plural the word is used to cover different branches of learning, and the Universities grant degrees such as Bachelor of Arts and Master of Arts. In its broadest sense the word is often used to indicate a high standard of skill in some work where individual taste may add to the result, *e.g.*, "the art of cooking," "the art of bookbinding" and even "the art of living."
Photo-tone Supplement: Modern British Art, 7, *between* 112 and 113

Artemisia, widow of the King of Caria, built the tomb of Mausolus (353 B.C.), one of the Seven Wonders of the Ancient World, 7, 292

Arterial means something to do with the arteries, or with a main channel. In recent years a large number of new arterial, or main, roads have been constructed in this country.
See *Road-making, Modern.*

Arteries are the vessels which carry blood from the heart, 8, 214

Artesian Wells are of small diameter but are driven to a great depth by boring machinery. They are much used in the dry parts of Australia. The name comes from Artois, a district of France, where such wells were first bored, 3, 216; 9, 416

Arthur, Prince (1187–1203). Grandson of Henry II, he claimed to succeed Richard Cœur de Lion, but was captured by John who is said to have ordered the boy's eyes to be put out
Picture. 2, 103

Arthur's Pass is the name of a road between the Southern Alps of the South Island of New Zealand. It has a famous railway tunnel, 3, 254; 5, 128

Artichoke. Name given to two distinct plants, both of which are used as vegetables. The globe artichoke has purplish blue flowers and the leaves or scales of the flower heads, before they open, are edible. The Jerusalem artichoke is more popular and it is the tuber produced by this variety which is eaten.

Artificer is the name given to a skilled mechanic. The Royal Navy employs aboard ship a class of men called engine-room artificers who have qualified as blacksmiths, coppersmiths, boiler-makers or engine fitters.

Artificial Respiration is applied to persons apparently drowned or unconscious through other causes. Schafer's method is the one usually employed, 8, 238
Picture: 8, 239

Artificial Silk. See *Rayon.*

Artisans are people who work with their hands at some skilled trade. The word covers carpenters, masons, bricklayers, smiths, men who operate machine tools and so forth.

Artist, the Elfin. A Poem by Alfred Noyes, 9, 102

Artois is a district of Northern France, part of the Pas-de-Calais. Artesian wells take their name from Artois.

Artz, David Adolf Constant (1837–90). A great Dutch artist, he delighted in painting the fisher folk of his native land.
Picture: 7, 53


BIRCHANDRA PUBLIC LIB

Arum Maculatum. Scientific name for the common cuckoo-pint, which is related to the arum lily, 1, 305, 344
Picture: 1, 351
Arum, Wild. See *Wild Arum.*
Arun. A Sussex river, it flows into the sea at Littlehampton, after passing through Arundel, 3, 33
Arundel. A Sussex market town. Here is Arundel Castle, a seat of the Duke of Norfolk, 3, 33
Photo-tone Supplement: The Castle of Proud Barons, 2, *between* 128 and 129
Arusha. A town of Tanganyika Territory in the farming region around Mounts Kilimanjaro and Mery, 3, 370
Arvida, Quebec. At this place the Aluminium Company of Canada has its plant and produces enough aluminium to supply the British Commonwealth and satisfy nearly half America's needs as well, 3, 195
Pictures: 3, 189, 194
A.R.W.S. means Associate of the Royal Water-Colour Society.
Asbestos is a fibrous mineral which can be teased out like wool and is not damaged by fire. Asbestos is used in many ways for keeping heat in or shutting it out. Gloves and garments of woven asbestos are worn by workmen exposed to fierce heat.
Ascalon was a Philistine city of Bible days and the birthplace of King Herod. It was later the scene of a battle of the Crusades between Richard I and Saladin.
Picture: 2, 102
Ascension is a British island of the South Atlantic. During the Second World War an important airfield was built here, 2, 346, 3, 394
Picture. 3, 393
Ascham, Roger (1515-68). A Yorkshireman and brilliant classical scholar. He became tutor to the Princess (afterwards Queen) Elizabeth.
Asdic. An abbreviation for Anti-Submarine Detector Committee which devised an apparatus now known by the name Asdic, for detecting submarines under water. It was used by the Royal Navy during the war of 1939–45 and proved very valuable.
Ash. A noble tree, the wood of which is much used for tool-handles, agricultural machinery and such purposes. The Mountain Ash, or Rowan (*q.v.*), belongs to a different order, 1, 400-401
Pictures: Buds of the Ash, 1, 287
Flower Buds Breaking, 1, 288
Flowers Fully Open, 1, 288
Trunk of an Ash, 1, 319
An Ash Tree, 1, 398
Ashanti. A British dependency in West Africa attached to the Gold Coast colony. Kumasi is the chief town. Timber, gold, and cocoa are produced, 3, 381
Ashburton is a town of south-west Devon. It is a gateway to Dartmoor.
Ashby-de-la-Zouch, Leicestershire, takes its name from the La Zouche family which was closely associated with it. It is a centre of the Leicestershire coalfield, 3, 75
Ashford is a town of Kent and an important railway centre. It stands on the River Stour.
Ashkhabad is the capital of the Turkmen Republic of the Soviet Union.
Ashmolean Museum, Oxford, belongs to the University, contains Egyptian, Greek, Roman, British and other antiquities. The original collection was presented to the University by Elias Ashmole in 1677, but the present building was erected in 1893–94.
Ashmore Islands are in the Indian Ocean and are administered by the Commonwealth of Australia, 3, 388
Ash, Mountain. See *Rowan.*
Ashridge Park. Famous estate near Berkhampstead, Hertfordshire. Former seat of the Earls Brownlow, it became the Bonar Law College in 1928, and since the World War has been a non-party college for adult education.
—the Queen beech, 1, 331
Ashton, Winifred. See *Dane, Clemence.*
Ashton-under-Lyne is a town of Lancashire, 6½ miles east of Manchester. Its industries include cotton spinning and the manufacture of hats.
Ashurbanipal was the name of a King of Assyria and of Nineveh (668–626 B.C.). His astronomers, in a report to him, made the first known reference to the planet Mercury, 8, 140
Picture: 9, 11
Ash Wednesday is the first day of Lent. It is so named from the use of ashes as a form of penitence.
Asia is the largest of the continents, covering an area of more than 17 millions of square miles. It contains some of the world's greatest mountains, *e.g.*, the Himalayas, and vast deserts as well as such rivers as the Tigris and Euphrates. The population of Asia is more dense than that of other continents and is estimated to be about 1,044 millions. Upwards of thirty separate countries are included in Asia occupied by many races and including India, China, Japan, large parts of the Soviet Union, Turkey, Persia, Afghanistan and Siam.
Asoka. An Indian tree named after Asoka, a Buddhist emperor (264–228 B.C.), 3, 332
Asoka was a great Buddhist Emperor of India. He ordered sculptor-artists to record Buddhist scriptures in stone, 3, 326
Aso-san is an ancient volcanic crater of Japan, 4, 250
Asp. Name given to several species of poisonous snakes. The Egyptian horned species is supposed to have been the type of Asp with which Cleopatra ended her life.
Aspatria is a town of Cumberland. It has a well-known agricultural college.
Aspen, sometimes called the Asp, is a tree of the poplar family. Its leaves, on long stalks, constantly flutter. The tree bears catkins, 1, 409, 410
Asphalt is a mixture of stone chippings, gravel sand and bitumen used as a surface for paths, playgrounds, etc. It is also a natural pitch, mined in France, Switzerland and elsewhere and found in Trinidad as a lake-like deposit.
Asphodel, Bog. See *Bog Asphodel.*
Aspidistra. A popular house plant often known as the Parlour Palm.
Asquith, Herbert Henry, Earl of Oxford (1852–1928). Brilliant politician and famous barrister. British Prime Minister in the early part of the War of 1914–18.
Ass. See *Donkey.*
Assam is a province in the north-east of the Union of India. It is a great centre for tea plantations. Oil is found here, and other products are rice, coal and timber. Shillong is the capital. The eastern district (Sylhet) of Assam was joined to East Bengal in 1947 and is now part of the Dominion of Pakistan, 3, 324
—the natives build bridges of cane, 5, 43
Assault Craft. Barge-like vessels, often propelled by out-board motors, are manned by the Royal Engineers. The vessels carry troops, guns or tanks.
Assayer is the name given to one who tests ores and alloys to find out what amount of a metal or metals they contain.
Assegai. The spear carried by a Zulu warrior.
Photo-tone Supplement: With the Zulus of Today, 3, *between* 304 and 305
Assembling is a method of catching moths, 8, 285
Pictures: Moths to Take by Assembling, 8, 282
Assembling and Light, 8, 288
Assent means approval or agreement. When a Bill has passed through both Houses of Parliament it is submitted to the sovereign for the Royal Assent. When this has been given it becomes law.
Assiniboine is the name of a river of Canada which runs into the Red River at Winnipeg, 3, 179
It is also the name of a lofty peak in the Canadian Rockies.
Photo-tone Supplement. Among the Canadian Rockies, 3, *between* 160 and 161
Ass in the Lion's Skin, The. A Tale from Æsop, 5, 326
Assisi is a town of Central Italy famous as the birthplace of St. Francis.
Pictures: The Church of St. Francis, 4, 147
In the Crypt of the Church, 4, 147
Assize Courts. These are the courts which try the most serious criminal cases. The visiting Judge presiding over the court is assisted by a jury. Assizes are held in the larger cities and towns two or three times a year. In London the Central Criminal Court at the Old Bailey takes the place of an Assize Court.
Picture: A Judge on Circuit, 9, 71
Association Football. See *Football.*
Assuan, or Assouan, Dam is at the first of the six great cataracts of the Nile. It was built 1898 1902, 4, 191, 195 *et seq.*; 5, 80. Also spelt *Aswan.*
Picture: 5, 75
Aston is an industrial town of Warwickshire, now part of Birmingham.
Assyria is an ancient country of which we read in the Holy Bible. It now

forms part of Iraq or Mesopotamia. The Assyrians became a powerful nation and flourished from about 1300 B.C. to 700 B.C. They were a race of fighters, and were the first to use chariots and horses in warfare. The arts of peace also flourished in Assyria. The capital city was Nineveh (*q.v.*), **9**, 13
Picture: The obelisk of Shalmaneser II, **9**, 13
King Ashurbanipal, **9**, 11

Astana is the name given to the Rajah's palace in Sarawak.
Picture. **2**, 325

Aster. A popular half-hardy annual plant in a variety of colours and forms. The michaelmas daisy is a perennial aster.

Asteroid. See *Planets.*

Astley, Philip (1742–1814). First a soldier, he became a famous horseman and started a riding school in London. From this school, in which there were entertainments other than horsemanship, arose the modern circus.

Astor, Lady, was the first woman Member of Parliament to sit in the House of Commons. She took her seat in 1919, **2**, 412

Astrakhan, standing on the River Volga, forms part of the Soviet Union and has a capital of the same name, a great port on the Caspian Sea.

Astrea is a 3,200-ton Norwegian motor ship, the first new passenger ship to be put into regular service between Britain and Norway since the war.
Picture: **5**, 262

Astrographic Telescope. A camera combined with a telescope used for charting the stars.
Picture: **8**, 115

Astrolabe. An instrument used by the Greeks and Arabs as well as sailors in later times to take altitudes and to mark the positions and the movements of the sun, moon and stars. It remained in use by sailors until the eighteenth century, **8**, 26

Astrologers are people who profess to foretell happenings by consulting the stars.

Astronomical Unit. This is a unit of measurement used by astronomers for distances within the Solar System, and also to some extent for distances in "interstellar" space. It is equivalent to the mean distance of the sun from the earth, accepted today as being 92,987,000 miles. For the longest distances in space the light-year is used as the unit, *i.e.*, the distance light travels in a year.

Astronomy is the science of the stars and heavenly bodies. From time immemorial the sky and its contents have attracted the attention and fascinated the minds of mankind. Today, the knowledge we possess on the subject is a tribute to man's persistence and ingenuity. Having at one time looked on the earth as the centre of all things, and later thought of the sun as the centre, man has found that the sun is just the centre of one "Solar System." Beyond the solar system we know there exists an immeasurable universe with millions of stars and possibly many other "systems." Apart from the value of the pursuit of knowledge for its own sake, the science of astronomy has resulted in discoveries of great importance to mankind, especially in conjunction with the science of physics. In the 2000 years or so immediately preceding the Christian era, the old civilizations of China, Egypt and Greece obtained much astronomical knowledge, and the Middle Ages of Europe contributed to the sum, correcting some of the early assumptions. Copernicus in the sixteenth century laid down the then revolutionary theories that the earth rotated on its own axis and that the planets moved round the sun. The theory was by no means accepted at once, and Galileo was summoned to appear before the Inquisition in 1633 because he supported it. On this foundation, confirmed and corrected in some details by later investigators, the science of modern astronomy has built up a wonderful description of the universe, aided by observatories and by telescopes of tremendous power. See *The Wonders of the Heavens*, **8**, 107 *et seq.*
—the Chaldean Astronomers, **9**, 14
Picture: **10**, 19

Astyages, King of the Medes and Persians in ancient times, **2**, 6
Picture: The King has a Dream, **2**, 6

Asuncion is the capital of Paraguay and stands on the Paraguay River. It was so named because it was founded on Assumption Day (1536), **4**, 326

Aswan. See *Assuan.*

Asyut is the name of a great dam or barrage across the River Nile, **4**, 191

Atacama is the name of a province of Chili which contains an extensive desert, **4**, 322, 393

Atahualpa. Known as the last of the Incas, he was ruler of Quito at the time the Spaniards under Pizarro landed. He was captured by the Spaniards in 1532, **4**, 324

Ataturk Boulevard is one of the main thoroughfares of Ankara, the capital of Turkey. It is named after Kemal Ataturk, the founder of modern Turkey, who died in 1938.
Picture: **4**, 164

Atbara, sometimes called the Black Nile, is a river of Abyssinia. It flows into the Nile, **4**, 191

Athabaska is the name of a large river and a large lake in Canada. It is also the name of a great Glacier in the Jasper National Park, whence flows the Athabaska River, **3**, 158
Picture: Athabaska Glacier, **3**, 188
Colour Plate: In Canada's Greatest National Park, **3**, *facing* 196

Athelney. A district of Somerset between the Tone and Parret Rivers. Here Alfred the Great took refuge. **2**, 86

Athelstan was a Saxon King of the English. He died 940.

Athena or **Athene** was one of the most important goddesses in Greek mythology. She was also called *Pallas*, or *Pallas Athene*, and was the goddess of wisdom, war and female arts and industries, and the protectress of the Greek cities, **5**, 359; **9**, 19. (*p.h.*)

Athens. In the days of Ancient Greece was one of the city states and became the capital of Attica before 700 B.C. For long it was the chief centre of Greek learning and culture, **2**, 1, 17; **9**, 18
—The building of the Temple, **2**, 402
Pictures: Collecting Men for the Assemblies, **2**, 18
Athenian Boys at School, **2**, 20
The Prison of Socrates, **2**, 36
How the Athenians Saw the Acropolis, **9**, 15
The Temple of Theseus the Hero, **9**, 17

Athens has been the capital of modern Greece since 1834 and has its port at Piræus. It is a large city with a population of nearly half a million and has many industries including textiles, **4**, 157
Pictures: Evzones on Parade, **4**, 154
In Ancient Athens To-day, **4**, 155
The Parthenon at Athens, **7**, 294

Athletes are people trained or able to take part in physical contests requiring strength, speed or agility and called athletic sports.

Athlone is a town of Westmeath, Eire. It stands on the River Shannon.

Atholl is one of the beauty spots of Perthshire, Scotland. It is famous for its mountain and river scenery.

Athos, Mount. A height in Greece. Through the isthmus on which it stands Xerxes cut a canal, **2**, 26

Atitlan is a beautiful lake in the Central American republic of Guatemala overlooked by a volcano of the same name, **4**, 302
Picture: **4**, 301

Atiu is one of the Cook Islands belonging to New Zealand.

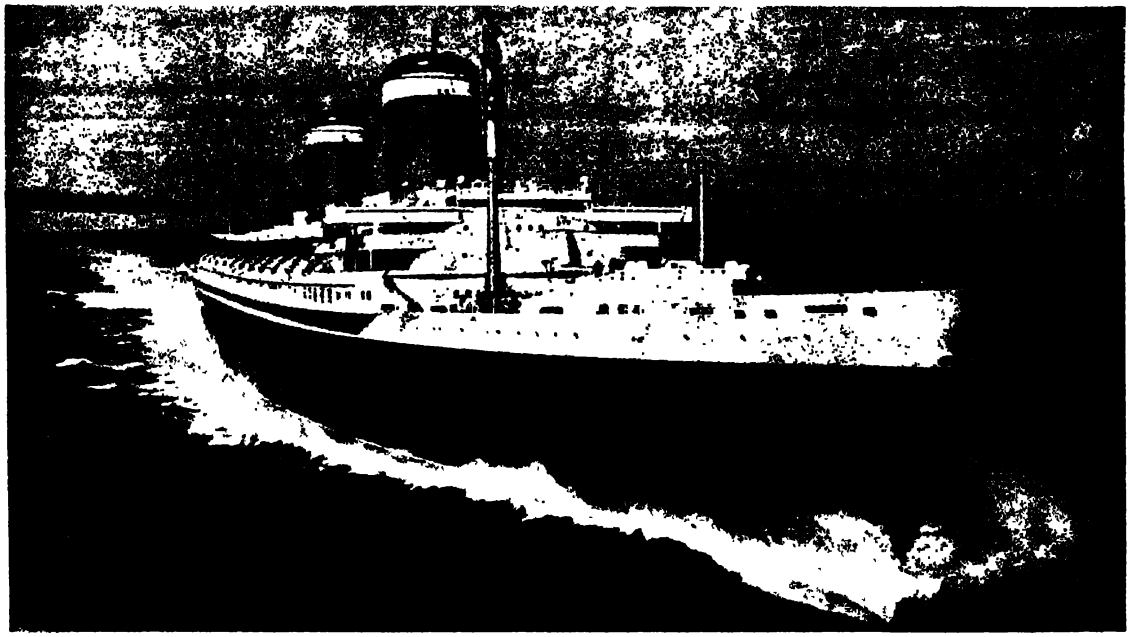
Atlanta, a great centre of the cotton industry, is capital of the State of Georgia, U.S.A.

Atlantic Charter. The name given to the joint declaration issued by President Roosevelt of America and Mr. Winston Churchill as a result of their meeting at sea in August, 1941. It stated the broad war aims of the Allies who, the Charter declared, did not wish to increase their territories: wanted changes of frontiers only in accordance with the freely-expressed wishes of the people concerned: and wanted all peoples to choose their own form of government and to work together for peace, **2**, 252

Atlantic City is a famous holiday and pleasure resort on the coast of New Jersey, U.S.A.

Atlantic Crossing. The first recorded crossing of the Atlantic Ocean was that by Christopher Columbus in 1492 from Palos, Spain, to the Bahamas (Watling Is.) in ten weeks. Record crossing by steamship was made by the American liner *United States* in 3 days, 10 hours, 40 mins. in 1952.
The first non-stop flight across the Atlantic was made by Sir John Alcock and Sir L. Whitten Brown from Newfoundland to Ireland, June 14–15th, 1919, in the remarkable time of 16 hours, 12 mins. A new record flight of 4 hrs. 40 mins. from N. Ireland to Newfoundland was made in February 1951 by the *Canberra* jet bomber.
The smallest sailing-boat to cross

RECORD ATLANTIC CROSSINGS



Mirrorpic.

For nearly 14 years the Cunard liner, *Queen Mary*, held the Blue Riband of the Atlantic, but a new record was set up in July, 1952, when the American liner *United States*, seen above, did the *Atlantic crossing* (see p. 22) from Ambrose Light to Bishop's Rock in 3 days, 10 hours, 40 minutes. The *United States* is 900 feet long and can carry 2,000 passengers and 1,000 crew.



International News

Helicopters are regarded as short-distance machines, but these two Westland-Sikorsky H-19 Helicopters broke all previous long-distance records when they crossed the Atlantic in July, 1952, having flown from Westover, Massachusetts, in just over 42 hours, with stops at Maine, Labrador, Greenland and Iceland. They are seen here as they flew in to land at Prestwick Airport (Scotland).

the Atlantic, so far as is known, was the *Nova Espero*, a 20-foot yacht, with a beam of 6 feet 6 inches, navigated by Stanley and Colin Smith, which crossed the Atlantic in 43 days, July-August, 1949.
Pictures: Record Atlantic Crossings, 10, 23

Atlantic Ocean. In breadth some 5,000 miles and about 8,500 miles in length, it separates Europe and Africa from America Its total area is 31½ million square miles. The North Atlantic is the saltiest of the great oceans of the world.
—first crossing by air in May, 1919, by Commander A. C. Read and three companions, 9, 295
—first non-stop flight by Captain John Alcock and Lieut. Whitten Brown in June, 1919, 5, 205; 9, 295

Atlantic Treaty (1949) was signed by Britain and eleven other nations. It provides for friendly co-operation and mutual defence, 2, 415

Atlantosaur Beds. Beds of rock on the eastern side of the Rocky Mountains containing remains of dinosaurs, 1, 27

Atlantosaurus, a giant form of dinosaurus, one of the great prehistoric animals, 1, 17, 22

Atlas, in the mythology of ancient Greece, was supposed to support the pillars which kept the heavens from the earth. His picture often appeared as a frontispiece in early books containing maps, and the name has been used ever since. An Atlas will be found at the end of this volume.

Atlas Mountains is the name of a range of north-western Africa. The chain gives its name to the Atlantic Ocean, 2, 274

Atlavik, or **Aklavik,** is a place on the Mackenzie delta in the North-west Territories of Canada. A regular air service links it with the rest of the Dominion It has an important Reindeer Station, 3, 162

Atmosphere is the layer of gases which encloses the earth, or any other heavenly body. Our atmosphere is a mixture of, roughly, four parts nitrogen, one part oxygen and traces of other gases. Above this belt of oxygen-nitrogen atmosphere exists a highly-rarefied atmosphere chiefly composed of nitrogen.

Atmospherics. Term used for crackling noises in a wireless receiver.

Atomic Bomb. The method of splitting the atom in such a way that a most powerful instrument of war could be manufactured was the work of British and American scientists who collaborated on the task in America. The first bomb was dropped on Aug. 6th, 1945, 2, 257; 7, 401

Atomic Energy. The tremendous power which would be released by splitting the atom has been known to scientists for years, but the first practical exhibition of this power came in the form of an atomic bomb in the war against the Japanese in 1945. The harnessing of this power for beneficial rather than destructive purposes is one of the great possibilities of the future, 7, 401 *et seq.*
Pictures: Watching the Gleep, 7, 401
A Pistol which preserves Health, 7, 403
Britain's first Atomic Pile, 7, 404
Inside a Cyclotron, 7, 405
How Atomic Power may be Chained, 7, 406, 407

A.T.S. means Auxiliary Territorial Service, the name given to the women's branch of the Army until 1949 when it became W.R.A.C. (*q.v.*).
—Princess Elizabeth in the A.T.S., 2, 264

Attar of Roses is used in the making of perfume, but only in single drops, to bring out the fragrance of other scents. Bulgaria is especially noted for its attar of roses, 4, 97, 360

Attila (406–453) was a leader of the Huns. He invaded both Germany and Gaul.

Attlee, Clement Richard (b. 1883). After leaving Oxford was called to the Bar. Served in the war of 1914–18 and entered Parliament in 1922. He became Deputy Prime Minister 1942–45 under Mr. Churchill whom he succeeded as Premier in July, 1945. He resigned in 1951 when Mr. Churchill again took office, 2, 260, 413

Aubert, Jean. A sixteenth century navigator who with Giovanni da Verrazano discovered the St. Lawrence River (1508) and explored 200 miles of its course, 2, 294

Auchterhouse Hill is a peak of the Sidlaws in Scotland. It rises to a height of nearly 1,400 ft.

Auckland. The largest city (population 289,800) in New Zealand and capital of the District of Auckland. It is the great port of call for vessels using the Panama route to New Zealand, 3, 263, 266
Pictures: Queen Street, Auckland, 3, 265
Auckland University, 3, 270, 273

Auckland Islands is the name of a group in the South Pacific. They belong to New Zealand, 3, 274

Aucuba. An evergreen shrub of the laurel family. Green leaves with yellow markings. The leaves and berries are poisonous.

Auda Abu Tayi was the name of one of the lieutenants of Lawrence of Arabia, 2, 384

Audemars was a Swiss who in 1855 patented the first process for making artificial silk, 6, 346

Auditoire is the name of a historic building at Geneva in which both Calvin and John Knox preached.
Picture: 4, 56

Audley End is the name of a wonderful mansion near Saffron Walden, Essex. It was built by Thomas Howard, first Earl of Suffolk, who was Lord Treasurer to King James I.
Picture: 3, 61

Audran, Claude, was a French painter who befriended the great French artist Watteau, 7, 66

Auger. A wood-boring tool with a long shank turned by a cross-handle at the end.

Aughrabies Falls are famous waterfalls on the Orange River of South Africa, 3, 286

August is the eighth month of the calendar. It is called after Augustus, a Roman emperor.

Augusta, which has many manufactures, is the capital of the State of Maine, U.S.A.

Augustine, Saint. Chosen by Pope Gregory to convey the message of Christianity to Britain. He landed in Kent with forty monks. Became Archbishop of Canterbury. Died 604, 2, 83, 403

Augustus (63 B.C.–A.D. 14) was the first Roman Emperor. See *Octavian.*

Auld Reekie is a name sometimes applied to Edinburgh, the capital of Scotland, because smoke (reek) sometimes hangs over the lower parts of the city.

Aulus Plautus Silvanus was one of the most distinguished Roman generals of his time. He led an expedition to Britain in A.D. 43, 2, 403

Aurangabad is a town of Hyderabad, India. Near-by are the famous Ellora Temples, 3, 325, 326

Auratum Lily. A variety of bulbous lily which comes from Japan.

Aurelius, Marcus (Antoninus) (121–180). A Roman nobleman, he rose to become consul and later emperor. He is famous for his philosophic meditations, published in modern times as the *Meditations of Marcus Aurelius.*

Auricle. One of the two ear-shaped upper chambers of the heart The right auricle receives blood from the veins and passes it to another compartment, called the right ventricle, below it. This ventricle sends it through the lungs for purification; and the left auricle receives it back from the lungs.

Auricula. A low-growing perennial plant for borders and pot culture.

Auriga is the name of one of the star groups or constellations.

Auroch. Name given to the animal better known as European bison.

Aurora Borealis is the term applied to displays of beautiful light sometimes seen in the northern skies. Auroras are caused by magnetic storms due to sun-spots, 8, 122

Aurungzeb (1618–1707). One of the greatest of the Mogul emperors of India He reigned forty-nine years. Son of Shah Jehan, 3, 326, 332
—he built the Jama Masjid at Lahore, 3, 338

Austen, Jane (1775–1817). Her father was Rector of Steventon, Hampshire. From her childhood she wrote stories and in 1811 published her first novel, *Sense and Sensibility,* followed by *Pride and Prejudice, Emma,* and others, 7, 206

Austerlitz is a town of Czecho-Slovakia, the scene of one of Napoleon's military victories (1805), 2, 200
Picture: 4, 95

Austin, on the River Colorado, is capital of the State of Texas, U.S.A.

Austin, Alfred (1835–1913). Son of a Leeds merchant, he turned early to literature, writing much verse. Made Poet Laureate, 1896.

Australia, Commonwealth of. The Commonwealth consists of the federated states of New South Wales, Victoria, Queensland, South Australia, Western Australia, Tasmania, and the Northern Territory. The federal capital of the Common-

wealth is Canberra. Australia has a great agriculture and farming industry, chief products being wool, wheat, dairy produce, cattle, sugar, and fruit. In addition, there is much mineral wealth, especially gold.
Every type of scenery is found in Australia, from snow-capped mountains to parched deserts. There are forests containing wonderful hardwood trees and stretches of " bush " where the national flower, the wattle, blooms in profusion. Australia also has some unique animals, including the kangaroo, koala bear, platypus, and others. The Commonwealth of Australia is a member nation of the British Commonwealth of Nations and is often called " the island continent " for obvious reasons.
Administered by Australia are Papua, part of New Guinea, certain Pacific Islands, and much of Antarctica, 3, 199-248
—how Australia became a Commonwealth, 2, 220; 3, 206
—the voyages of Captain James Cook, 2, 309 *et seq.*
—Australian products, 4, 394
—Australia's Long Aqueduct, 6, 252
Photo-tone Supplements: Wild Life in Australasia, 1, *between* 336 *and* 337
Australia, 3, *between* 240 *and* 241
Australia House, the headquarters in London of the Government of the Commonwealth of Australia, is in the Strand, a famous London thoroughfare running from Temple Bar to Trafalgar Square.
Picture: 3, 14
Australian Aborigines are the original primitive inhabitants of the Australian continent. They are often referred to as " blackfellows " and are found especially in Arnhem Land, in the Northern Territory, where there are special Aboriginal Reserves, *i.e.*, lands set apart for them where they live their own primitive life. There are said to be some 47,000 Aborigines in the Commonwealth, 3, 222 *et seq.*
Pictures Primitive Youth and Modern Progress, 3, 202
A Young " Black Fellow," 3, 204
In the Northern Territory, 3, 223
Australian Alps. These mountains are in South-eastern Australia, spread fanwise across the border of Victoria and New South Wales. Greatest peak of the Alps (and in Australia) is Mount Kosciusko (*q.v.*). The rivers of the Alps are now being harnessed to provide hydro-electric power, 3, 213
Pictures: The Australian Alps Country, 3, 229
In Mount Buffalo National Park, 3, 236
Australian Ant-eater. See *Echidna.*
Australian Emu. See *Emu.*
Australian Ladybirds. Why a number of them were sent to California, 1, 254
Australian Mudfish. Fish that resemble the occupants of seas and lakes in prehistoric times, 1, 16
Australian National Antarctic Research Expedition. A unit of this expedition landed on desolate Heard Island in 1948 to establish there a permanent weather and scientific research post, 3, 244
Photo-tone Supplement: From Spray Ridges to Crystal Fairyland, 2, *between* 368 and 369
Australian National Emblem. See *Wattle.*
Australian Opossum. See *Opossum.*
Australian Platypus. See *Platypus.*
Australian Sea Horse. See *Sea Horse.*
Austria is a country of Central Europe through which the River Danube flows. It became part of Germany in 1938, but in 1945 regained its independence, although it was occupied by the Allies. The country is mainly an agricultural one and the great forests which used to exist were greatly reduced during the Second World War. Austria, especially the region of the Tyrol, is a favourite holiday centre. Vienna is the capital, 4, 90, 362
—annexed by Germany (1938), 2, 246
Pictures: A Farmer of the Austrian Tyrol, 4, 3
Innsbruck, the Tyrolean Gateway to Austria, 4, 88
In the Tyrol of Austria, 4, 89
Austria, Duke of. Named Leopold, he captured Richard Cœur de Lion on his way back to England from the Crusades, 2, 103
Austrian Gate is the name of a great gorge on the River Danube where it enters Austria, 4, 88
Austrian Succession, War of (1740–48). France, Spain, and Prussia fought Austria, England, and Sardinia The war was ended by the Treaty of Aix-la-Chapelle which confirmed Prussia's possession of Silesia, 2, 408
Austrian Tyrol. See *Tyrol.*
Autobiographical means something relating to or having the character of an autobiography, *i.e.*, an account of a person's life, written by the person himself.
Autogiro. A form of Helicopter (*q.v.*) and one of the earliest aeroplanes to make a vertical flight successfully. It differs from the helicopter in the fact that the lifting blades are not rotated by an engine but are like a windmill and rotate freely in the wind. They are kept moving by the forward thrust of the airscrew in front of the plane which creates the necessary air movement to rotate the lifting blades above the plane.
The autogiro was the invention of Juan de la Cierva (b. 1895), a Spanish engineer and inventor.
Giroplane is a name also applied to this type of aeroplane.
Autolycus (fourth century, B.C.) was one of the early Greek astronomers.
Automatic means of its own accord, by itself, not depending on the will. Applied to machinery in which certain movements, usually made by hand, are made or controlled by the machine itself.
Automatic Telephone Exchange. An exchange where subscribers are put in touch with one another by a system of dialling, 6, 195
Pictures: In an Automatic Exchange, 6, 196
Where Machinery Replaces Fingers, 6, 197
The Calling Dial of an Automatic Telephone, 6, 198
Autumn Crocus is the popular name for the bulbous plant colchicum autumnale.
Auvergne is the name of a district of France which was once a province. The Auvergne plateau forms the central core of France from which the tributaries of the Loire and Garonne come down, 4, 13
Auxiliary means giving help. The main engines of a ship would not be able to work without the help of auxiliary engines which pump water into the boilers and condensers.
Avalanche is the name given to a large mass of snow, ice, rock or earth sweeping suddenly down a mountain-side.
Avalon. (1) Traditionally the place where King Arthur and Queen Guinevere are buried. It is sometimes called " the Isle of Avalon," and its site is said to be occupied now by the town of Glastonbury, 3,
(2) A popular bathing beach of Sydney, New South Wales, Australia, 3, 231
Avarice is simply greed, especially greed for wealth or gain. A miser is said to be avaricious.
Avebury, Lord (John Lubbock) (1834–1913) to whom Bank Holidays and the Shop Hours Act are due, was in 1881 president of the British Association. His book on ants, bees and wasps is a classic.
Avebury is a Wiltshire village where there is a vast earthwork and ditch. Near the village is Silbury Hill, the largest artificial mound in Europe, 3, 37, 415; 7, 288
Avenue of Spain is the name of a graceful promenade at the Moroccan port of Tangier. It is so called because the palm trees planted along its length were presented by the Spanish Government
Picture. 4, 129
Average means ordinary, usual. A person of average intelligence is neither more nor less intelligent than the general run of his fellows. The average weight of 200 children is their total weight divided by 200
Aviary. A place in which to keep birds. A garden aviary should face south and be sheltered from the north and east.
Budgerigars thrive in an aviary, 8, 312
Aviation. The science of flying. See *Aeroplane,* also *Conquering the Air,* 5, 183 and *Civil Aviation,* 5, 231
—the progress of commercial aviation, 2, 242
Aviemore is a noted Scottish resort in Inverness-shire, 3, 124
Avignon. An ancient French town standing on the River Rhone. In the fourteenth century the Popes had their palace here, 4, 16
Photo-tone Supplement. On the Seine and the Rhone, 4, *between* 112 and 113
Avisa Relation oder Zeitung. This was the name of the first newspaper printed. It was produced in Germany in 1609, 9, 206
Avoca is the name of a famous vale or valley in County Wicklow, Eire. There is also the River Avoca, 3, 144

Avocet. A bird having webbed feet and long legs. Its black and white colouring and long curved beak make it easily recognisable. It is a member of the snipe family and for a century it rarely visited this country though once common in the Fens. Since the war it has begun to return to East Anglia again.
Picture: Return of the Avocet, **1**, 183

Avoir and Avdp. mean avoirdupois.

Avon. Name given to several English rivers, the word meaning a river.
1. The Bristol Avon. Rises in the Cotswolds, flows through Bristol and ends at Avonmouth, **3**, 26, 72
Picture: **3**, 56
2. The Upper Avon, flows through Stratford and enters the Severn, **3**, 70.
Picture: **3**, 71
3. The Wiltshire Avon, which flows into the sea at Christchurch, Hants. In Scotland there are tributary streams bearing the same name.

Avonmouth, Gloucestershire, an outport of Bristol, it is situated at the mouth of the River Avon and has deep-water docks, **3**, 32, 72

Avro York. Name of a famous British aeroplane. It is the civil transport version of the Avro Lancaster bomber.
Picture: **5**, 218

Awe is the name of a loch of Argyllshire, Scotland, and of a river which flows from the loch.

Awns are the grey feathery masses that form on travellers' joy or old man's beard at the end of the summer, the hairs on ears of barley are known by the same name, **1**, 306

Axis is the imaginary straight line round which a body turns. The axis of the earth runs due north and south through its centre and has the poles at its ends.

Axis Countries was the name taken by Germany and Italy prior to the Second World War. The collaboration between Hitler and Mussolini was often referred to as the Rome-Berlin Axis.

Axminster is a town of Devon once famous for its carpets, though it is no longer the main centre of the industry.

Aye-aye. An animal about 3 ft. in length, including the tail, like a lemur. It has monkey-like hands and the teeth of a rodent. Found in Madagascar.

Aylesbury is the county town of Buckinghamshire. It is a centre of printing and gives its name to a breed of ducks.

Ayr is the county town of Ayrshire, Scotland, standing at the mouth of the river of the same name. It has many industries and is a shipping centre. Robert Burns was born nearby.
—About 4 miles from Ayr is Prestwick, one of the most important airports in Britain, **3**, 120

Ayrshire is a county of south-western Scotland. It is noted for its farmlands and for many industries, among them coal, iron and textiles. Ardrossan, Troon and Girvan are Ayrshire towns, **3**, 121

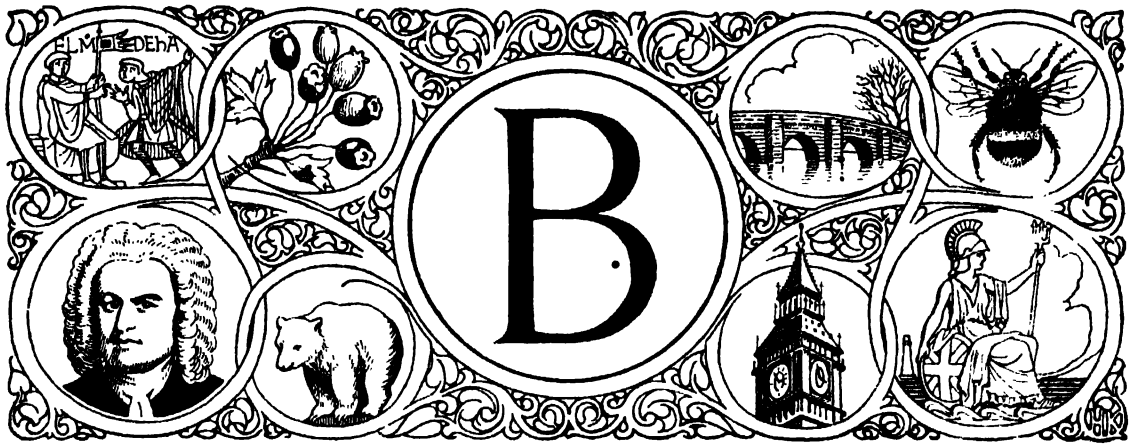
Azaleas are cousins to the rhododendron but they are not evergreen, *i.e.*, they cast their leaves in autumn.

Azimuth means an arc of the heavens extending from the zenith to the horizon which it cuts at right angles. The completion of this arc forms an azimuth circle. Maps drawn on this Azimuthal or Great Circle projection are used by airmen as they give a straight line route between their centre or base and the destination to which they are flying.
Aviation Map: **10**, 4

Azores. A group of Portuguese Islands in the Atlantic Ocean. Fruit and wine are local produce, but the islands' main importance is in connection with the trans-Atlantic air route. Santa Maria, one of the islands, is a refuelling point for this purpose, **2**, 292, **4**, 140, 148

Azov, Sea of. A sheet of water beyond the Crimea in the Soviet Union. It is connected with the Black Sea by the Kerch Strait.

Aztecs were a race of American Indians who conquered the highly-civilised Mayan people of Central America about A.D. 1000. They had a proper system of education, and extended their territory considerably during some 500 years up to A.D. 1579. They were conquered by the Spaniards under Cortes, **4**, 297; **9**, 30



B.A. means Bachelor of Arts.

Baalbek is a wonderful ruined city of antiquity standing about midway between Tripoli and Damascus in the Holy Land. The ruins to be seen there today are mostly Roman in origin.
Picture **4**, 180

Babar (1483–1530). A Mahommedan, he conquered India and became the first of the Moghul Emperors, **3**, 326

Bab-el-Mandeb means "Gate of Tears." This is the name of the entrance to the Red Sea which was so called because many sailors were wrecked there in ancient times, **3**, 388

Babington, Anthony (1561–1586) gave his name to the Babington Plot which was a conspiracy against Queen Elizabeth led by him, **2**, 152

Baboons. African apes, having dog-shaped heads. They squat on their hindquarters much as do dogs, **1**, 101
Pictures: **1**, 98, 99
Photo-tone Supplement · Monkeys and Their Ways, **1**, *between* 96 and 97

Baby Blue Eyes is a popular name for the plant Nemophila.

Babylon. A city of the ancient world and capital of Babylonia some 2,000 years ago. It was built in the form of a square and was divided into halves by the river Euphrates. It reached a high standard of civilisation, **2**, 8, 401; **4**, 200; **9**, 12
—How Babylon was taken, **2**, 6
—Alexander takes its wealth, **2**, 44
—the Babylonians conquer Israel, **2**, 402
—Cyrus the Elder conquers Babylon, **2**, 402
Picture: The King's Palace at Babylon, **2**, 9

Bacchante was the name of the ship in which Prince George and his brother went for long cruises, **2**, 229
Picture: **2**, 231

Bacchus, in the Greek legends, was the god of wine and fertility, **5**, 354
Picture: **9**, 16

Bach, John Sebastian (1685–1750). Came of a musical family and rose to the front rank of the world's composers. He was not only a composer, but also a very competent organist. His output as a composer is amazing, and his works include many cantatas, orchestral pieces, fugues for the clavier and organ music. Three of his well-known choral works are the Mass in B minor, the Passion Music according to St. John, and the Passion Music according to St. Matthew. He became blind in later life, **7**, 158. (*p.h*)
Picture. **7**, 161

Bach, Karl Philip Emanuel (1714–88). He was the third son of Johann Sebastian Bach and himself a great musician, **7**, 162

Bachelor is the name given to an unmarried man. The word is also used when a person passes the final examinations at Oxford, Cambridge or other university. The successful student then becomes a bachelor of arts, medicine, science or whatever branch of learning has been followed. The second use of the word has no direct connection with the first.

Bachelor's Buttons is a popular name for the flowers of ranunculus.

Bacillus is the term used to describe a disease germ. Its name is a Latin word meaning a little stick or rod, which such a germ resembles in shape.

Back, Sir George (1796–1878). Entered the British Navy at the age of twelve and went with Sir John Franklin on three Arctic expeditions. Commanded the expedition to search for Sir John Ross.

Backbone of England is a name often given to the Pennine Mountains (*q.v.*).

Back's Fish River is in the North-West Territories of Canada. The river flows into the Arctic Ocean, **2**, 303

Bacon, Francis. A famous English lawyer and philosopher (1561–1626). His Essays and other works marked him out as an original thinker and the prophet of a new era. A number of people have also sought to prove that Bacon was the real author of Shakespeare's plays. He became Lord Chancellor in 1618, **7**, 356
Picture **7**, 357

Bacon, Roger (*c.* 1214–92) became a friar of the Order of St. Francis. A deep student of optics, astronomy and explosives, **5**, 161, **7**, 355

Bacterium. A tiny, living organism which causes decay. Bacteria (*plural*) are regarded as being plants, of somewhat the same nature as fungi. The action of bacteria causes milk to turn sour.

Bactrian Camel. See *Camel.*

Bacup is a town of Lancashire, interested chiefly in the cotton industry.

Badajoz is the name of a province of Spain. It has a capital of the same name, one of the towns involved in the Peninsular War.

Baden is one of the States of Germany. It has many forests and grows much fruit. Its capital is Karlsruhe, and other towns include Mannheim and Heidelberg.

Baden-Baden is a famous international spa on the edge of the Black Forest country of Germany. It stands in the valley of the Oosbach, **4**, 87

Baden-Powell, Lord, of Gilwell (1857–1941). Saw military service in India, Afghanistan and South Africa. Defender of Mafeking. His chief work was the founding of the Boy Scout movement in 1908 and he remained Chief Scout until his death, **2**, 226
Picture: **2**, 235

Badenweiler. A Black Forest spa of Germany standing on the slopes of the Blauen, a peak 3,822 ft. high. The health-giving properties of its waters were known to the Romans **4**, 87

Badger. A carnivorous animal about 3 ft. in length, still found in the remoter parts of Great Britain, **1**, 122
—Spoor of the badger, **1**, 122, 123
Pictures: The Badger, **1**, 122

B is the second letter and first consonant of our language. By consonant is meant a letter which cannot be sounded by itself, but requires the aid of a vowel. In uttering B one has to use the lips, pressing them together. Hence B is called a labial, or lip letter, from the *Latin* labium – a lip. Moreover, the sound is stopped altogether for a moment, so B is also classed among the "mute" letters. In music, B is the seventh note of the scale of C major or minor. Chemists use the capital letter as the symbol for boron, one of the elements, which occurs in borax. B appears as an abbreviation for different words in B.C. (before Christ); and B.P. (British Pharmacopœia).

Badger, Honey. See *Ratel.*

Badger Towns. Towns and places beginning with Brock. Badgers once frequented such districts, brock being an old name for these animals, **1**, 123; **9**, 363

Badges of Rank in the Navy, Army or Air Force are worn on the sleeves, shoulder-straps or other parts of the uniform.
Picture: **9**, 376

Badges, Trade, are worn by sailors, soldiers and airmen in the ranks to indicate the fact that they have passed the necessary tests in the particular trade or work they perform.
Picture: Some Badges Worn by Naval Ratings, **8**, 21

Badri Das Temple is one of the sights of Calcutta. It is a place of worship of the Jains.
Picture: **3**, 349

Baekeland, Dr. Leo Hendrik (1863–1944). The American inventor of the material bakelite which marked a great advance in the plastics industry, **6**, 369

Baer, Karl Ernst von (1792–1876). A great German naturalist. He was the founder of comparative embryology.

Baffin Bay is the name given to the stretch of water between Greenland and Baffin Land.
Picture: **2**, 355

Baffin Land is a large island off the north-east corner of Canada. It was visited by Sir Martin Frobisher. Only a few Eskimos now live there, **2**, 296
Picture: **2**, 296, 297

Baffin, William (1584–1622). British navigator. He discovered the large bay on the west of Greenland which bears his name (1616) and sought to find the North-west Passage.

Bagamoyo is a seaport of Tanganyika Territory, East Africa, **2**, 338

Baganda. This is the name of the chief tribe of the Uganda Protectorate. They number about a million. On the shores of Lake Edward they have flourishing fisheries.
Pictures: **3**, 373

Bagatelle. Game played with a cue on a board or table, nine balls being generally used. Invented early in the nineteenth century.

Bagehot, Walter (1826–77). An English essayist and writer on economics. (*Pron.* Baj-ot).

Baghdad is the capital of Iraq and stands on the River Tigris. Not much now remains of the ancient city, famed in the *Arabian Nights,* and the present city has fine modern buildings, including a university. It is a great centre of communications and is on a main air route, **4**, 200, 202
—visited by the fourteenth century traveller Ibn Batuta, **2**, 271
Pictures: A Gateway of Kadhiman's Sacred Mosque, **4**, 200
Baghdad's Blue Mosque, **4**, 201

Bagpipes are wind instruments of very ancient origin now specially associated with the Highlands of Scotland, though found in many other countries.
Scots pipers invariably play whilst walking to and fro, and their music is a feature of the Highland Games.
Pictures: March Past at Braemar, **3**, 130
Piping Competitions, **3**, 133

Bahamas. A British colony in the West Indies consisting of a group of islands off the south-east coast of Florida. About twenty of the islands are inhabited, and the capital is Nassau on the island of New Providence. Tomatoes are grown for export, and sponges and sisal are major industries, **2**, 278; **3**, 398 *et seq.*
Pictures: Watling Island, **2**, 277
The Sponge Fleet in Harbour, **3**, 299
Bleaching and Curing, **3**, 400

Bahia is the fourth largest city in Brazil. It is noted for its cigars and cigarettes.
Picture: **4**, 320

Bahia Blanca is a town of Argentina which consists of the city itself and five neighbouring ports from which grain is shipped. It was visited by Charles Darwin, **2**, 344

Bahrein. A state of Arabia consisting of the archipelago of the Bahrein islands in the Persian Gulf. Manamah, the capital, is on the largest island which is called Bahrein. It has important oil refineries and pearl fisheries. It is sometimes spelt Bahrain, **4**, 205, 206

Baikal is the name of a large lake of the Soviet Union in Asia. It lies to the north of the trans-Siberian railway a little to the south-east of the town of Irkutsk.

Baile Atha Cliath is the Irish name for Dublin, the capital city of the Republic of Ireland (Eire), **3**, 150

Bally, Francis (1774–1844). Well-known British astronomer, he discovered the so-called Baily's Beads.

Baily's Beads is the name given to the tiny points of light seen round the edge of the moon during a solar eclipse. They are caused by sunshine coming through the peaks of the mountains of the moon, **8**, 126
Picture: **8**, 129

Baird, John L. (1889–1946). A pioneer in making television practicable, **6**, 219
—the Baird Television system, **2**, 241. See also *Television.*

Bait made of food materials is an important item in the angler's equipment, and requires careful preparation, **8**, 248

Bakelite, now a household word, is the trade name for a wide range of articles made in plastics, **6**, 369

Baker, Sir Benjamin (1840–1907). A British engineer, he was designer, with Sir John Fowler, of the Forth Bridge at Edinburgh, **5**, 48, 49

Baker, Sir Samuel White (1821–93). A Londoner by birth, he set out in search of the sources of the Nile. Sighted the Albert Nyanza in May 1865. He tells of his adventures in a series of remarkable books.

Bakewell is a town of Derbyshire associated with Dorothy Vernon. It gives its name to Bakewell tarts.

Bakhtiari is the name of one of the more primitive people of Iran (Persia), **4**, 203

Baku, a port on the Caspian Sea, is the capital of the Azerbaijan republic of the Soviet Union and is an important oil centre, being linked by pipe line with Batum on the Black Sea. The oil refineries for this region are at Baku, which is linked by rail to Iran (Persia), **4**, 203; **6**, 310

Bala is a town of Merionethshire, North Wales. It stands on the lake of the same name.

Bala is the largest lake in Wales. It is about a mile in width and some four miles in length, **3**, 100

Balaclava is a town and port of the Crimea, in the Soviet Union, a favourite health and holiday resort. Associated in memory with the Charge of the Light Brigade, **2**, 217

Balakirev (1837–1910). Notable Russian musical composer, **7**, 187

Balancers. Name given to two knob-like parts on a fly, **1**, 239

Balance Weight. Name given to a piece of solid metal between one pair of spokes on the wheels of a railway engine.

Balanoglossus. An animal like a worm found in sand and mud on the shore or the bottom of the sea in temperate parts of the world

Balboa, Vasco Nunez de (1475–1517). A Spaniard, he settled a colony of his countrymen at Santa Maria and afterwards crossed the Isthmus of Panama, discovering the Pacific Ocean, **4**, 134, 305
Picture: **4**, 308

Balboa. (1) The name given to the dollar of Panama and derived from Balboa, the great Spanish explorer, **4**, 305
(2) A port at the Pacific entrance to the Panama Canal, similarly named after the explorer, **4**, 306

Balder the Bright and Beautiful. A Tale from the Norse, **5**, 339

Baldock is a town of Hertfordshire and an important road junction.

Balearic is the name given to a group of islands in the Mediterranean. They belong to Spain and include Majorca and Minorca, **4**, 137
Pictures: On the Island of Majorca, **4**, 133

Balfour Declaration. This is the name given to a statement issued by the British Government in 1917 promising the Jews British sympathy in "the establishment in Palestine of a National Home for the Jews . . . it being understood that nothing shall be done which may prejudice the civil and religious rights of existing non-Jewish communities in Palestine," **4**, 182

Bali is an island of Indonesia inhabited mainly by the Balinese people. See *Indonesia.*

Baliol, John (1249–1315). King of Scotland, chosen by Edward I to whom Baliol did homage thus provoking war, **2**, 113

Balkans. The name of a mountain chain in Bulgaria, in eastern Europe, and hence the name of the Balkan Peninsula of which Bulgaria is a part. We speak, too, of the Balkan States, meaning those countries of southern Europe between the Adriatic and the Black Sea, *i.e.,* Yugoslavia, Albania, Greece, Turkey (in Europe), Bulgaria, and Rumania, **4**, 93 *et seq.*

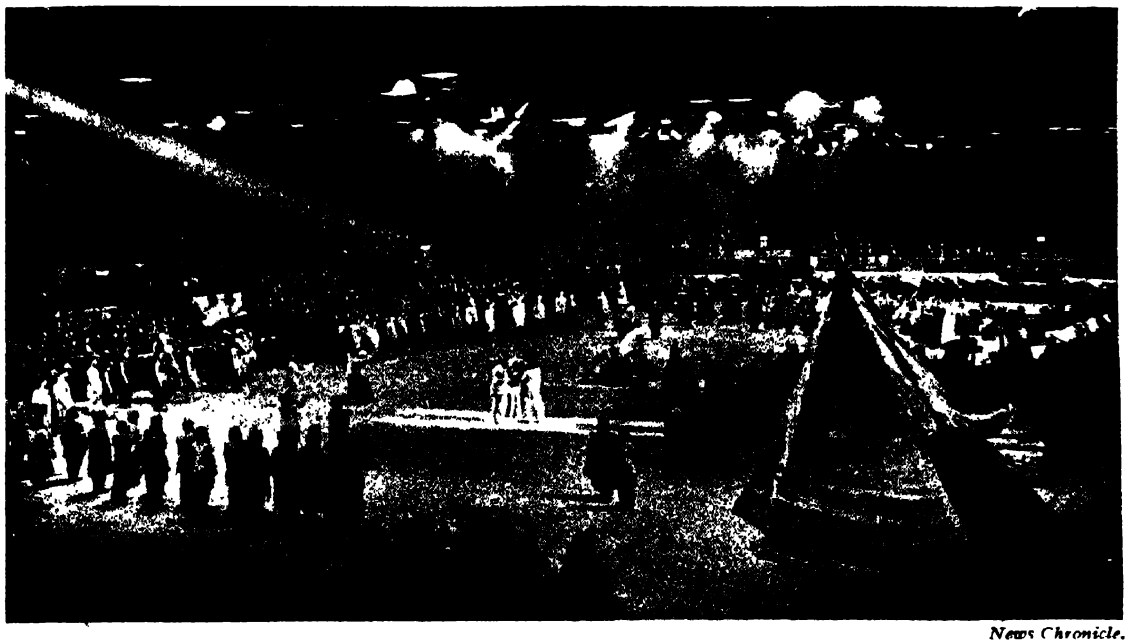
Balkhash is the name of a large lake of Central Asia upon whose shores live the people of the Soviet republic of Kazakhstan which is part of

BALLET TAKES THE STAGE



Topical Press

The dramatic representation in the theatre known as *Ballet* (see p. 30) owes its origin to Ancient Greece, though its present form originated at the French Court about 1581. In more recent times the Russian Ballet began a new vogue and its popularity in Britain has resulted in many fine performances. Our picture shows the Sadler's Wells Ballet in the prologue "The Christening" to a performance of *The Sleeping Beauty* at the Covent Garden Opera House.



News Chronicle.

In this picture we have the brilliant fire ballet "The Fire Spirits" which formed part of a performance of Coleridge Taylor's fine setting of Longfellow's *Hiawatha* at the Empress Hall, Earl's Court, London. Among the performers were two fiery ponies and Red Indian chiefs and braves in all the glory of their full war paint.

Russia.
Picture: **4**, 114

Ball, John, a travelling priest who stirred the peasants in this country to revolt in the fourteenth century, **2**, 127

Ball, Sir Robert Stawell (1840-1913). For many years he was Astronomer Royal for Ireland. He made popular by voice and pen the study of astronomy.

Ball-and-socket is the name given to a joint having a smooth, rounded knob fitting into a hollow. Our shoulders have such joints, **8**, 212

Ballantyne, Robert Michael (1825-94). Born at Edinburgh, he became one of the best-known writers of boys' books. Among his works is *The Coral Island*, **7**, 218
Picture: On the Brink of Disaster, **7**, 219

Ballarat. A township of the state of Victoria, Australia, and the scene of early gold discoveries. Ballarat now has a population of over 40,000 and the deeper gold reefs are still being mined, **3**, 204; **6**, 91

Ballater is a town and touring centre of Aberdeenshire, Scotland. Balmoral Castle is near by.
Picture: Ballater Highland Games, **3**, 131

Ballet in its modern form means music for dancing associated with the stage, the expression of music in terms of movement, and usually having some story as a background. Its history goes back to ancient times but in its modern form it was brought to France from Italy and was given a great impetus by the work of Baltasar de Beaujoyeulx among those who attended the French court. Later Russia developed its own pattern and the Diaghilev Ballet of 1909 onwards gave it renewed attraction. Anna Pavlova belonged to this company and did much to popularise ballet in Britain. Adeline Genée and Phyllis Bedells also attracted great audiences by their performances, and in more recent times Margot Fonteyn and Robert Helpmann have added fresh charm to the art of ballet. The performances given by the Sadler's Wells company have brought steadily-increasing enthusiasm for ballet among both young and old.
Pictures: Ballet Takes the Stage, **10**, 29

Balloch. A small town and touring centre of Dumbartonshire at the lower end of Loch Lomond, **3**, 128

Balloon. A large fabric bag made to contain some lighter-than-air gas. This enables the bag to rise from the ground, and this type of flying-machine was the first to achieve success in enabling man to fly. The first balloons of which we know were fire-balloons, which date back to 1783. They were lifted by hot air from a fire. At a later date gas was employed. "Free" balloons, with or without crews, are used for exploring the stratosphere, and for making weather and other observations.
Barrage balloons became familiar in the 1939-45 war and were used to check low-flying enemy aeroplanes, **5**, 183, 185 *et seq.*
Pictures: Montgolfier Balloon Ascent, **5**, 188
Ten Miles High, **5**, 190
Barrage Balloon of the World War, **5**, 191

Balls Made of Wool. See *Woolly Balls.*

Ballymena is a town of County Antrim, Northern Ireland. It is a centre of the linen industry.

Balm. Name given to a fragrant herb grown in gardens and used in making medicine, **1**, 333

Balm of Gilead. A cedar-scented plant, member of the cedronella family. The leaves will blister the skin of human beings, **1**, 348

Balmoral Castle is a royal residence in Aberdeenshire on the River Dee. It is surrounded by a deer forest.
Picture: **3**, 135

Balsam, Yellow. See *Yellow Balsam*

Baltic. Name of a sea of Northern Europe. It is joined by various waterways, including the Kiel Canal, to the North Sea, **4**, 33

Baltic States. Name generally given to the three countries of Estonia, Latvia and Lithuania. They are now soviet republics and form part of the U.S.S.R.
—invaded by Germany, **2**, 248 *et seq.*

Baltimore, Maryland, is one of the chief tobacco ports of the U.S.A., **4**, 293

Baluchis is the name given to natives of Baluchistan, **3**, 313

Baluchistan. A province of the Dominion of Pakistan in the extreme north-west of India. It is largely a region of barren mountain and desert. The chief town is Quetta, **3**, 313

Baluchitherium. An extinct animal bearing a resemblance to the horse and the ox.
Colour Plate: **1**, *facing* 37

Balusters is the name given to the upright staves which support the handrail of a staircase.

Balzac, Honoré de (1799-1850). Well-known French novelist and writer.

Bamangwato is the name of one of the most important tribes of Bantu people of the Bechuanaland Protectorate. Their chief town is Serowe, **3**, 294

Bamberg is a town of the Rhine with textile and leather industries. It stands on the upper Main, a tributary of the Rhine, and is linked with the Danube by the Ludwig's Canal, **4**, 90

Bambi. Title of one of Disney's films and the name of the chief character, a fawn in the woods, whose adventures with the other animals form the main interest of the story, **9**, 291
Pictures: His First Stroll Through the Woods, **9**, 290

Bamboos are really giant grasses, or reeds. They grow in all the warmer parts of the world and are extensively used in China for a great variety of purposes, **1**, 311, 312
Picture: Giant Bamboos in Ceylon, **4**, 360

Bamburgh is a small town on the coast of Northumberland. It is the burial place of the famous heroine, Grace Darling, **7**, 298

Banana is the name of a port of the Belgian Congo. It is situated at the mouth of the River Congo.

Bananas form the main food of millions of people in Central America and Pacific islands. No other fruit bears so heavy a crop per acre. There are many distinct varieties, **1**, 312
Pictures: **1**, 313; **3**, 212

Banavie Bridge, Inverness-shire, spans the River Lochy near Fort William.
Picture: **3**, 127

Banbridge, a centre of the linen trade, is a town of County Down, Northern Ireland.

Banbury is an ancient town of Oxfordshire noted for its Cross and for the cakes that bear its name.

Banca is an island of the Dutch East Indies, a great source of tin, **6**, 130

Band, The Donkey's. A Fairy Story, **5**, 317

Bandage. A strip or square of material to bind up a limb or wound or for keeping dressings and splints in place. See *First Aid in Accident or Illness*, **4**, 404

Bandar Shah is a Persian port on the Caspian Sea and the northern terminal of the Trans-Iranian Railway, **4**, 203

Bandar Shahpur is a Persian port on the Persian Gulf and the southern terminal of the recently-completed Trans-Iranian Railway, **4**, 203

Bandicoot. Found in Australia and New Guinea. It is about the size of a rabbit and is one of the pouched animals, its hind legs being much longer than the front ones.

Bandon is a country town of County Cork, Eire. The name is also given to a river of Southern Eire.

Bane. A cause of harm or ruin; a pest. Weeds may be described as the bane of gardening and farming. The original meaning of the word—poison—is preserved in the name of the plant called henbane.

Banff is a seaport and the county town of Banffshire, Scotland. It has fishery interests.

Banff is one of the great National Parks of Canada where there is wonderful scenery, comfortable hotels, and every facility for fishing, hunting, canoeing, and sports. The Park is in the province of Alberta.
Pictures: A "Mountie" in the Wonderland of the Rockies, **3**, 159
Vermilion Lake, **3**, 188
Banff Springs Hotel, **3**, 193
Photo-tone Supplement: The Dominion of Canada, **3**, *between* 160 and 161

Banffshire is a county of north-east Scotland. Its interests are mainly agricultural, but it also has important industries.

Bangalore is an ancient city, the capital of Mysore, India.

Bangkok. The capital of Siam, it stands on the River Menam and has both old and new buildings. It is the great seaport of Siam, being only a few miles from the river mouth and is intersected by many waterways, **4**, 207 *et seq.*
Pictures: Rama the First Bridge, Bangkok, **4**, 207
Old and New in Bangkok, **4**, 208
A Temple Guardian, **4**, 210

The Shrine of the Emerald Buddha, 4, 210
The Temple of the Dawn, 4, 211
The Temple of the Emerald Buddha, 4, 211
Bangor is a city, commercial centre and holiday resort on Menai Strait, 3, 100 and 108. Also name of a seaport in Ulster, N. Ireland.
Bangweolo is a lake of Northern Rhodesia. Just south of the lake Livingstone died, 1873, 2, 331
Bank Holidays are days made by law as holidays for banking institutions and this practice is followed by most business firms. It was largely due to the efforts of Sir John Lubbock (afterwards Lord Avebury) that an Act of Parliament was passed in 1871 which decreed certain days as bank holidays, 9, 361
Bantams are really small fowls and are suitable pets for children. The birds are easily housed and fed, 8, 311
Bank, I Know a. Poem by William Shakespeare, 9, 86
Bank of Commerce, Toronto, has been called "the highest building in the British Commonwealth."
Picture: 3, 185
Bank of England. This famous institution in London was formed in 1694, and it has occupied its present site since 1734. It is sometimes referred to as "the Old Lady of Threadneedle Street." Until 1946 it was a private corporation but was then nationalised, 2, 174, 408
Pictures: 2, 176; 3, 11
Banks, Sir Joseph (1743–1820). A famous British nature-lover. He went with Captain Cook on a voyage round the world and was a founder of the African Association, 2, 322
Banksia coccinea. A striking flower which flourishes in Australia.
Photo-tone Supplement: 1, *between* 336 and 337
Bannockburn. Name of a great battle between the English and Scots fought near Stirling in 1314. Here Robert Bruce defeated Edward II, 2, 115
Pictures: The Battle by the Stream, 2, 115
On the Field of Bannockburn, 3, 110
Banqueting Chamber, Whitehall. The Banqueting House of the old Palace of Whitehall can still be seen. King Charles I was beheaded outside the Banqueting Hall in 1649, 2, 162
Picture: The Execution of Charles I, 2, 163
See also *Whitehall, Palace of.*
Banteng is the name of a wild ox to be found in Borneo and other parts of the East.
Banting, Sir Frederick Grant (1890–1941). Famous Canadian doctor who was chief discoverer in 1922 of Insulin as a cure for diabetes, 7, 388
Bantock, Sir Granville (1869–1946). A famous British musical composer, he is noted for his choral pieces, 7, 191
Picture: 7, 193
Bantry, at the head of a bay of the same name, is a port, holiday centre and town of County Cork, Eire.
Bantu is the word used to describe the various languages, number nearly 400, of the peoples native to Africa. But it is also used to describe a group of African races which includes many types from the pygmies to the tall Zulus. The Bantu people in the Union of South Africa outnumber Europeans by about five to one, 2, 289; 3, 275 *et seq.*
Pictures: Vasco da Gama wins over the Bantu Chiefs, 2, 290
Kraals of the Bantu, 3, 275
Native Women at a Domestic Task, 3, 278
Like a Human Bee-hive, 3, 279
Bantu Workers in a Gold Mine, 3, 282
Scenes in a Native College, 3, 287
Bantu Life and Ways, 3, 290
A Lesson in Safety First, 3, 292
On the Fruit Farms, 3, 295
The Ricksha Boy, 3, 304
The Men of Zululand, 3, 306
A Zulu Constable, 3, 307
Some Zululand Types, 3, 308
Banyan, a tree common in India. Each main branch throws out roots which strike into the soil and form new trees, 1, 280
Picture: 1, 328
Baobab is the name of a large tree found in Africa and Australia. It bears curious, gourd-like fruits from which a medicine is obtained.
Baptista, Pedro. A Portuguese trader who journeyed across Africa in the nineteenth century from Angola to the Zambezi. José, a fellow-countryman, was his companion, 3, 276
Baralong is the name of a tribe of Bantu people living near the South African town of Mafeking, 3, 294
Barama. A river of British Guiana on the north-east coast of South America, 3, 385
Barba is one of the lofty volcanic mountains of Costa Rica, 4, 304
Barbados is a British island in the West Indies. It is noted for its sugar plantations and as a health resort. Bridgetown is the capital, 3, 398; 4, 389
Pictures: Fishing Craft in Bridgetown, 3, 397
Taking Sugar-cane to the Factory, 4, 391
Barbarian. An uncivilised, brutal or uncouth person. The Greeks regarded all people who could not speak Greek as being Barbarians.
Barbarossa was the name given to Frederick I, Holy Roman Emperor (1152–90). It means "red beard." Frederick I was killed while leading a crusade, 2, 102
—he opposed the Pope, 4, 73
Barbary. This is the name given to the North African lands of the Mediterranean west of Tripoli. This coastal strip was so called because it was the home of the Berber people, 3, 380
Barbary Ape. Name of a monkey found in Northern Africa and in Gibraltar. It is tailless.
Barbary Pirates. Name given to the corsairs who, from their bases in the so-called Barbary states of North Africa, plundered shipping in the Mediterranean. They became notorious towards the end of the fifteenth century and in succeeding centuries several countries made efforts to suppress them. Their final extinction came when Algeria was conquered by France in 1830, 8, 53
Picture: 8, 52
Barbary Sheep, Wild. See *Wild Barbary Sheep.*
Barbed means having barbs or sharp points projecting backwards from the end, as in an arrow-head or fish-hook. The barb is intended to prevent the arrow or hook from being withdrawn when once it has pierced.
Barbel. A family of fresh-water fishes related to the carp. One species of Barbel is found in some of our British rivers. It is recognised by the four barbels (Lat. *barbellus,* little beard) on the upper jaw. It may attain a length of 2 ft. and a weight of 12 lb. The flesh is rather coarse.
Special Colour Supplement British Fresh Water Fishes (Plate 2), 8, *between* 256 and 257
Barberry is a popular name for the shrub berberis (*q.v.*).
Barberton is a town of the Transvaal, Union of South Africa. In the neighbourhood there are gold-mines and fruit is grown extensively
Barcelona is the name of a province of Spain and of its capital, which is a great seaport and the chief town of the district of Catalonia. It is a district of cork, wines and nuts. Here Ferdinand and Isabella received Columbus, 2, 278, 4, 135, 136
Picture: 4, 134
Bard is the title bestowed upon a poet, especially the old-time poets who composed and sang verses in honour of great men. The bards flourished particularly in Wales, where even today they compete in the National Eisteddfod.
Bard of Avon is the name given to our greatest poet and dramatist, William Shakespeare, 3, 70
Bardsey. An island off the coast of Carnarvonshire. It is associated with the Welsh bards
Barebones Parliament. The Parliament which appointed Oliver Cromwell "Lord Protector of the Commonwealth." See *Little Parliament.*
Barents, William (died 1597). A Dutch navigator, he tried to find the North-East Passage to India, 2, 293, 306 *et seq.*
Pictures: A Fight with a Polar Bear, 2, 306
Good Servant but Bad Master, 2, 307
Taking to the Boats, 2, 308
Barfleur is a holiday resort and seaport on the coast of Northern France. It is within easy reach of Cherbourg. Outside Cape Barfleur was fought a famous naval battle in 1692 in which the French were heavily defeated. The victory has given the name Barfleur to several British battleships, 8, 8
Bargeboard is the name given to timbering used for filling in the gable ends of roofs.
Barham, Richard Harris (1788–1845). An English novelist and poet best remembered for his *Ingoldsby Legends.* He was a minor canon of St. Paul's.
Bari. A town and port of the "heel" of Italy on the shores of the Adriatic Sea, 4, 154
Barima. A river of British Guiana, on the north-east coast of South America, 3, 385
Baring-Gould, Sabine (1834–1924). A

clergyman, he wrote many books of folklore and mythology as well as novels. Author of the famous hymn, *Onward, Christian Soldiers.*

Barkly East. A town of Cape Province, Union of South Africa, capital of a district having the same name. It is a centre of sheep-raising.

Barley is an important cereal crop much used for malting and as food for farm stock.
—how the seed is sown, **6**, 383

Barmouth is a holiday resort on the coast of Merioneth, North Wales. It was here that the first National Trust property was purchased, **3**, 406

Barnacle. One of the shellfish. It clings to the hulls of ships and to rocks.

Barnard Castle is a town of County Durham, standing on the River Tees.

Barnard, Edward Emerson (born 1857). A famous American astronomer associated with the Lick and Yerkes Observatories. He took photographs of the Milky Way, **8**, 178

Barnardo, Thomas John (1845–1905). Born in Ireland, he studied medicine in London and became a doctor. In 1866 he started the first of his famous homes for children.

Barnes, standing on the River Thames, is a residential district of Surrey and suburb of Greater London.

Barnes, William (1801–86). An English clergyman, he is famous for his poems in the dialect of Dorset.

Barnet. A town of Hertfordshire, on the Great North Road. It forms a residential suburb of Greater London. In the Wars of the Roses a battle was fought here (1471), **2**, 135

Barn Owl. See *Owl.*

Barnsley is a large manufacturing town of the West Riding of Yorkshire. It has heavy industries.

Barnstaple is a town of North Devon, standing on the River Taw, its old-time name being Barum.

Barnum, Phineas T. (1810–91). One of the world's greatest showmen, he was born at Connecticut. In 1871 established his huge travelling show.

Barograph. A recording barometer. It makes its records on a paper chart, **5**, 4
Picture: **5**, 11

Barometer. An instrument which shows the pressure of the atmosphere and is useful in foretelling coming changes in the weather. The mercurial barometer, with an upright glass tube inside which a column of mercury rises and falls as atmospheric pressure alters, was invented by Torricelli, in 1640; and the aneroid barometer by a Frenchman, Vidi, about 200 years later, **4**, 14-16; **9**, 349
Pictures: The Discovery of the Barometer, **5**, 1
The Barograph, **5**, 11
Barometer and Thermometer, **5**, 15

Baronet. One bearing the rank of nobility next above that of a knight. It is the lowest hereditary rank. Baronets were first created by James I in 1611 to raise money.

Barotseland is a large district of Northern Rhodesia. The Natives are Bantus.

Barque. A sailing vessel having three or more masts, all of them but one square-rigged.
See Ship.

Barquentine. A sailing vessel with two or more masts, one of them square-rigged.

Barracuda. Known as the tiger of the sea. A giant fish of the West Indies, **1**, 212

Barrage Balloon. See *Balloon.*

Barranquilla is a port of Colombia, South America, **4**, 330

Barren Lands. This is the name given to the sub-Arctic grasslands of North-West Canada where caribou range in large herds and multitudes of water fowl breed in the early summer. Reindeer have been introduced and herds are flourishing, **3**, 158

Barrhead. A town of Renfrewshire, Scotland. It has heavy industries and weaving mills.

Barricade. To obstruct with a barrier. During revolutions, when fighting takes place, people barricade the streets with vehicles, furniture or any other articles upon which they can lay hands.

Barrie, Sir James Matthew (1860–1937). Born at Kirriemuir, Forfarshire, and one of our greatest writers and playwrights. After achieving success with his novels he gained wider fame with his plays *Quality Street, Admirable Crichton,* and *The Little Minister,* as well as the well-known children's play *Peter Pan,* **7**, 244
Pictures: **3**, 24; **7**, 245

Barrington. Name of a village a few miles from Cambridge.
Picture: **1**, 33

Barrogill Castle, also known as the Castle of Mey, is in Caithness and is one of Scotland's oldest inhabited houses. It is now the Scottish home of the Queen Mother.
Picture: **3**, 134

Barrow-in-Furness, a town of North Lancashire with shipbuilding yards and engineering works, **3**, 90

Barry is a seaport of Glamorganshire and a centre for coal export, **3**, 94

Barry, Commodore, was an American naval officer who took a leading part in the War of Independence. His statue can be seen outside the Independence Hall, Philadelphia.
Picture: **4**, 263

Barry, Sir Charles (1795–1860). A famous British architect, the present Houses of Parliament at Westminster were built to his designs, **7**, 322
Colour Plate: Westminster Bridge and Big Ben, **3**, *Frontispiece.*

Bart. and **Bt.** are abbreviations for baronet.

Bartholdi was a famous French sculptor who designed the Statue of Liberty which stands on Bedloe's Island, New York harbour. The statue was presented to the U.S.A. in 1886 by France.
Picture: **4**, 273

Bartlett, Captain Robert A., a British seaman from Newfoundland. He worked with Peary in Polar expeditions, **2**, 358

Barton is the name given in some parts of the country to that part of a farm where the corn-stacks are built, **6**, 390

Basaltic means formed of basalt, or containing basalt, a well-known dark grey or almost black rock flung out during a volcanic eruption. Fingal's Cave, in the island of Staffa, and the Giant's Causeway, Northern Ireland, are formed of basaltic columns.

Bascule. Name given to a leaf or part of a bridge that can be raised and lowered. See *Tower Bridge.*

Basic Lava is the more fluid type of material that flows from a volcano, sometimes spreading in the form of a lake.
Picture: **1**, 44

Basic Slag. A by-product in the making of basic steel, very useful as a garden fertiliser, **8**, 272

Basil. A hedgerow plant about 1½ ft. in height bearing reddish flowers on short stalks.

Basilica of Saint-Nazaire is the wonderful church in the French medieval city of Carcassonne.
Picture: **4**, 17

Basilisk, Hooded. See *Hooded Basilisk.*

Basingstoke. Market town of North Hampshire and the centre of a great farming district.
—how paving stones were lifted there, **1**, 362

Basket. The basket is among the oldest receptacles known, those made by the Britons being even sold in the market-place of ancient Rome. Osiers of willow are much used for baskets, which are also made from cane and from plaited raffia. See *Basketry, Indian,* and *Basket Weaving in Cane.*

Basketry, Indian, is made with raffia and forms an interesting handcraft, **8**, 386
Pictures: **8**, 386, 387, 388

Basket-making is an ancient village craft that can still be found in many parts of Britain, especially in the West Country. Withies are used for the woven baskets made there.
Picture: **3**, 54

Basket Weaving in Cane is an interesting handcraft. How the work is done, **8**, 391 *et seq.*
Pictures: Cane Basket Weaving (1), **8**, 393
Cane Basket Weaving (2), **8**, 394

Basking Shark. The largest creature of its kind seen in British waters.
Picture: **1**, 214

Basle is a canton or province of Switzerland. It gives its name to the canton's chief town which is a frontier town and railway centre famous for its silks, **4**, 61, 70

Basques. A people who live in the Pyrenees, both in France and Spain, and in the district around the Spanish port of Bilbao. They are fiercely independent and have a language of their own, **4**, 135

Basra. A port of Iraq on the Persian Gulf. Its chief trade is in dates, but it exports gums. Another name is Bussorah, **1**, 334; **4**, 200

Bass. Deep-sea fish akin to perch.
Picture: **1**, 222

Bass, Dr. George. Surgeon in the Royal Navy, he sailed round Tasmania in 1798, thus proving it to be an island. Bass Strait is named after him, **3**, 203

Bass Drum is the name given to the large drum carried in a military band.

Bassenthwaite is one of the lakes in the English Lake District.

Bassoon. This " wood-wind " instrument is really the bass of the oboe family. It is composed of five pieces, which, when fitted together, form a tube about 8 feet long The bassoon has been utilised considerably in the works of the great musicians.
See *Orchestra.*
Bassora. Another name for *Basra (q.v.).*
Bass Rock is the name given to an island at the mouth of the Firth of Forth.
Bass Strait is the stretch of water dividing Tasmania from the rest of Australia. It is about 140 miles wide.
Pictorial Map: **3,** 243
Bast, as used for tying purposes in the garden, comes from the inner bark of a form of lime tree.
Bastia is a town and port of the French island of Corsica.
Picture: **4,** 138
Bastille, The. Was the fortress-prison on the outskirts of old prison. As the symbol of royal oppression, it was stormed by the mob of Paris on July 14th, 1789, and subsequently demolished. Its site is marked by the Place de la Bastille in modern Paris, **4,** 10
Picture. **2,** 413
Basutoland. A High Commission Territory in South Africa. Like Bechuanaland and Swaziland it is administered by a High Commissioner in London working through a local Resident Commissioner. It has an area of over 11,000 square miles, inhabited mostly by native Africans. Crops such as wheat and maize are grown and there is a flourishing sheep-rearing industry, **3,** 304
Basuto War (1880). This was one of several conflicts which Britain had with the Basutos before the government of Basutoland was taken over by Britain in 1884, **3,** 280
Bat. A wing-handed animal It has no wings but a broad web of skin joins the finger bones to the body, **1,** 138
—are bats blind ? **1,** 140
Pictures: Whiskered Bat, **1,** 139
Long-Eared Bat, **1,** 139
Noctule Bat, **1,** 140
Batang Baram. A small river of north Borneo at whose mouth are the oil centres of Miri and Seria, **3,** 404
Batang Rajang. A river of north Borneo, entering the South China Sea below Sibu in Sarawak, **3,** 404
Batavia is the capital of Java, in the Dutch East Indies.
Bateleur. An African tropical bird believed to feed on small varieties of monkey. Known as the short-tailed eagle.
Picture: **1,** 190
Bates, Harry (1850-99). Famous British sculptor.
Picture: **2,** 35
Bates, Walter Henry (1825–92). A famous British naturalist, he explored the Amazon, **2,** 339 *et seq.*
Pictures: Making Pets of the Monkeys, **2,** 339
The Anaconda in its Native Home, **2,** 340
Butterflies of the Tropics, **2,** 341
Bath, Order of the. See *Knights of the Bath.*
Bath Road. See *Great Bath Road.*
Bath, Somerset. A famous inland health resort whose curative waters were known to the Ancient Britons and Romans. The city was a favourite resort during the Regency period.
Pictures. **2,** 208, **3,** 32
Bath Abbey Church. Famous church at Bath, Somerset. Its west front shows in stone the story of Jacob's Ladder.
Picture. **3,** 32
Bathgate is an industrial town of West Lothian, Scotland.
Bathurst. (1) The capital of the British colony and protectorate of Gambia. It is an important air centre, **3,** 382
(2) A town of New South Wales, **6,** 91
(3) A town of this name is situated in Cape Province, Union of South Africa.
Bathyscape. An undersea " balloon " devised by Professor Piccard, **7,** 415
Batley is a town of the West Riding of Yorkshire. It is a centre of the woollen trade.
Batman, John (1800-1839). An early settler in Victoria, Australia. He bought a large tract of land from the aborigines on behalf of a number of people in Tasmania, marking prophetically on his map " reserved for a township " over the site where the great city of Melbourne now stands, **3,** 204
Baton Rouge, a centre of the cotton and other industries, is capital of the State of Louisiana, U.S.A.
Bats, Giant, of the prehistoric world, **1,** 21
Bats of the Sea. Name given to giant rays or devil fish, **1,** 210
Bat, Vampire. An animal found in Brazil by the naturalist, Bates, **2,** 340
Battersea Power Station is a landmark by the Thames in London. The building is 480 ft. long and its fluted chimneys are 300 ft. high. It was designed by Sir Giles Gilbert Scott.
Picture. **6,** 299
Battery, The. A riverside part of New York harbour named after the British fort which was built there in 1693.
Colour Plate: The Ocean Voyager's First Glimpse of the New World Today, **4,** *facing* 292
Battle is a small town of Sussex. It takes its name from the **Battle** of Hastings, fought near by.
Battle of Britain. Name given to great air battles which took place in the Second World War after the fall of France. In a single day more than 180 German machines were brought down, **2,** 250; **5,** 210 *et seq.*
Picture. Some of the Few, **2,** 251
Batum is a well-known oil-exporting town on the Black Sea. It belongs to the republic of Georgia, in the Soviet Union.
Batuta, Ibn. See *Ibn Batuta.*
Bauchi Tableland. An area of east central Nigeria containing important tin mines, **3,** 382
Bauxite is a kind of clay, a mineral and a form of oxide of aluminium, **6,** 131
—vast quantities are mined in British Guiana, **3,** 385
—first discovered at Les Baux, **4,** 350
Picture : Reclaiming Bauxite at Arvida, Quebec, **3,** 189
Bavaria is a state and former independent kingdom of Southern Germany. It contains beautiful lake and Alpine scenery. It is an agricultural district but has also mineral and forest wealth. The capital is Munich, **4,** 84
Pictures: Medieval Rothenburg, **4,** 77
An Old Gate-tower in Rothenburg, **4,** 78
Bavarian Dancers entertain, **4,** 79
Oberammergau, Village of the Passion Play, **4,** 80
Under the Watzmann's Shadow, **4,** 81
Bavarian Alps. A mountain range running along the southern border of Germany and Austria. It is a favourite holiday and winter sports district and forms the highest part of Germany. The highest peak is the famous Zugspitze, nearly 10,000 ft. high, **4,** 84
Pictures: Bavarian Dancers entertain, **4,** 79
Oberammergau, Village of the Passion Play, **4,** 80
Under the Watzmann's Shadow, **4,** 81
Photo-tone Supplement: The Continent of Europe, **4,** *between* 112 and 113
Bavenda is the name of a tribe living in the valleys and mountain passes near Louis Trichardt, a town in the Transvaal.
Picture: **3,** 278
Bawbee. An old-time Scottish coin similar to the modern halfpenny.
Pictures: **8,** 305, 306
Bax, Sir Arnold (1884-1953). British musical composer and Master of the Queen's Musick, 1942-53, **7,** 192
Bay. This shrub is the true Laurel. In ancient times its leaves were used to make wreaths for conquerors.
Bayeux. A town of Northern France noted for its ancient tapestry which was made about A.D. 1080, **9,** 344. (*p.h.*)
Pictures: **9,** 342-3
Bay of Naples. See *Naples, Bay of.*
Bay of Plenty. A broad bay on the north-eastern coast of North Island, New Zealand. In the mountains between this bay and Hauraki Gulf there are gold mines, **3,** 264
Bay of Whales is the name given to a point on the Great Ice Barrier of the Antarctic, **2,** 367
Picture: **2,** 367
Pictorial Map: **2,** 367
Bayonet. A short, sword-like weapon which infantry soldiers fix to the muzzle ends of their rifles. The blades are made of steel. When not in use the bayonet is carried in a scabbard.
Bayreuth is a town of Bavaria, Germany, noted for its musical festivals.
Bazaar is the name given to the trading and commercial parts of the old cities of the Middle East.
Colour Plate: A Bazaar in the Middle East, **4,** *facing* 197
B.B.C. stands for British Broadcasting Corporation (*q.v.*).
B.C. means before the Birth of Christ.
B.C.G. stands for Bacillus Calmette-Guerin, a system of vaccination against tuberculosis which has had considerable success, **7,** 416
B.C.L. means Bachelor of Civil Law.
B.Comm. means Bachelor of Commerce.
B.D. means Bachelor of Divinity.
Beachy Head. Great chalk cliff near

Eastbourne rising to a height of more than 500 ft. from the sea, 3, 33
—French naval victory on Beachy Head (1690), 2, 173

Beaconsfield, Benjamin Disraeli, Earl of (1804–81). A famous statesman and Prime Minister in the time of Queen Victoria, whom he proclaimed Empress of India. He was to a large extent the founder and chief inspiration of the modern Conservative party. As a novelist he also achieved considerable success, 2, 220, 411

Beadlet. Name sometimes given to the Smooth Sea Anemone, 1, 230

Beads are small ball-shaped objects made of wood, glass, amber and other materials pierced through the centre to take a thread, 8, 376
Picture: 8, 376

Bead Threading is an interesting handcraft for the little folk, 8, 376
Picture: 8, 376

Beagle was the name of the vessel in which Charles Darwin made his famous voyage of exploration, 2, 342 *et seq.*

Bean. Name of the seeds of various leguminous and other plants, rich in protein and used as food for human beings as well as for animals. Well-known members of the bean family include the broad bean, French bean, runner, and haricot. Other examples are the Lima bean (S. America) and soya bean of China and Japan—the seeds of the haricot bean remain fertile for a century, 1, 376

Bean Goose. Name of a variety of British wild goose.

Bear, Black. An animal found in America. It can stand up straight and is related to the brown variety, 1, 64

Bear, Blue. An animal found in Tibet. It is quite distinct from other varieties of bear.

Bear, Brown. Found in Europe and Asia. It lives on honey, fruit and roots, 1, 62
Pictures: 1, 63

Bear, Grizzly. Found in North America, among the Rocky Mountains. It may grow to be 9 ft. in length, 1, 64

Bear Island is in the Arctic Ocean, off the coast of Siberia. There is also a Bear Island in James's Bay, Canada, 2, 306

Bear, Malayan. This type of bear is smaller than most of the bear family, with a very short coat, usually black.
Picture: 1, 64

Bear, Polar. Large animal with creamy yellow coat found in Arctic regions. A good swimmer, 1, 62. (*p.h.*)
—how it catches seals, 1, 62
—why doesn't it get cold ? 1, 62
—why doesn't it slip on the ice ? 1, 62
Pictures: 1, 62, 63
A Polar Bear and her Cubs, 10, 35

Bearded Dragon Lizard. A species of the frilled lizard; it is quite harmless.
Picture: 1, 152

Beardmore Glacier is to be found in Antarctic regions, 2, 316
Pictorial Map: 2, 367, 372, 375
Photo-tone Supplement: Pack-Ice and Penguins, 2, *between* 368 and 369

Bearer is the name given to an Indian servant, 3, 322

Bear's Ear. Name given to the border plant Auricula.

Beasts, King of. Title given to the lion, 1, 47

Beating the Bounds is an old custom dating back to times when there were no parish maps, 9, 319
See *Tradition.*

Beating out Gold Leaf. This is claimed to be the world's oldest industry. How the work is carried out, 6, 97 *et seq.*

Beatrice (Beatrice Portinari). A beautiful girl with whom the great Italian poet Dante fell in love, 7, 125

Beatty, David (1871–1936). Earl and Admiral of the Fleet. During the war of 1914–18 he commanded the 1st Battle Cruiser Squadron and in 1916–19 the Grand Fleet. His memorial may be seen in Trafalgar Square, London
Picture: 3, 18

Beaufort and Beaufighter. Names given to two well-known Australian military aeroplanes, 5, 218

Beaumaris. Small market town and holiday resort in the Isle of Anglesey. Beaumaris Castle was built by Edward I, 2, 112; 3, 102

Beaumont, Francis (1584–1616). An English poet and writer of dramas. Closely associated with John Fletcher.

Beautiful Birds, Some. About the peacock, flamingo, Bird of Paradise and other feathered friends, 1, 198

Beaver. A large rodent animal weighing some 50 lb. and about 30 in. in length. Its home is in the northern parts of Europe, Asia and America, 1, 118
Pictures: The Beaver, 1, 118
How he Fells a Tree, 1, 119
The Beaver Plans a New Lodge, 1, 120
The Beaver builds its Lodge, 1, 121

Beaver Board is manufactured chiefly from wood pulp and fibre and is useful for forming wall surfaces.

Beche-de-Mer. A species of sea-slug found on coral reefs in the Pacific and used as human food, 3, 228; 9, 368

Bechuanaland Protectorate is one of the High Commission Territories in South Africa. In common with Basutoland and Swaziland, it is administered by a High Commissioner in London who works through a Resident Commissioner. Bechuanaland occupies about 275,000 sq. miles of central South Africa. Stock-raising and dairy farming are the main occupations of the people who are predominantly Bantu, 3, 294

Becke, George Louis (1848–1913). An Australian traveller and novelist. All his stories savour of the South Seas.

Beckenham is a town of Kent, a suburb of Greater London.

Becket, Thomas à (1119–70). The son of a London merchant, he was attached to the court of the Archbishop of Canterbury. He afterwards became Archbishop and was murdered in the Cathedral, 2, 100, 404
Pictures: The Plot against à Becket, 2, 99
Martyrdom of Thomas à Becket, 2, 101
In Canterbury Cathedral, 3, 37

Beckton, North Woolwich, is the largest gas works in the world. It can pour 4½ million cubic feet of gas into the mains per hour.
Picture: 6, 15

Becquerel, Antoine Henri (1852–1908). He found that uranium emits an invisible radiation after the manner of Rontgen rays and that this can pass through thin sheets of metal so as to affect a photographic plate. In 1903 was awarded, jointly with Curie, the Nobel prize for the part he played in the discovery of radium.

Beddgelert, a small town of Carnarvonshire and a holiday centre. Burial place of Gelert, Llewellyn's faithful hound, 3, 106

Bede (673–735). The first great English scholar. He lived in a monastery at Jarrow-on-Tyne.
He is generally known as the Venerable Bede, 2, 84
Picture: 2, 84

Bedford, standing on the River Ouse, is the county town of Bedfordshire. It is associated with the memory of John Bunyan and has an ancient Grammar School.
Photo-tone Supplement: Modern Architecture, Bedford Girls' Modern School, 7, *between* 288 and 289

Bedfordshire is a county of England through which runs the River Ouse. It is noted for its farm and market garden produce.

Bedlington. Name given to a popular breed of terrier dogs.
Picture: 10, 111

Bedloe's Island is to be found in the harbour of New York. On it is the famous Statue of Liberty.
Picture: 4, 273

Bedouin is the name given to those Arabs who lead a wandering existence, living in tents, 2, 383
Pictures: A Sheik and his Guests, 2, 384

Bedruthan Steps is a staircase made by nature on the cliffs of north Cornwall, 3, 49

Beds. means Bedfordshire.

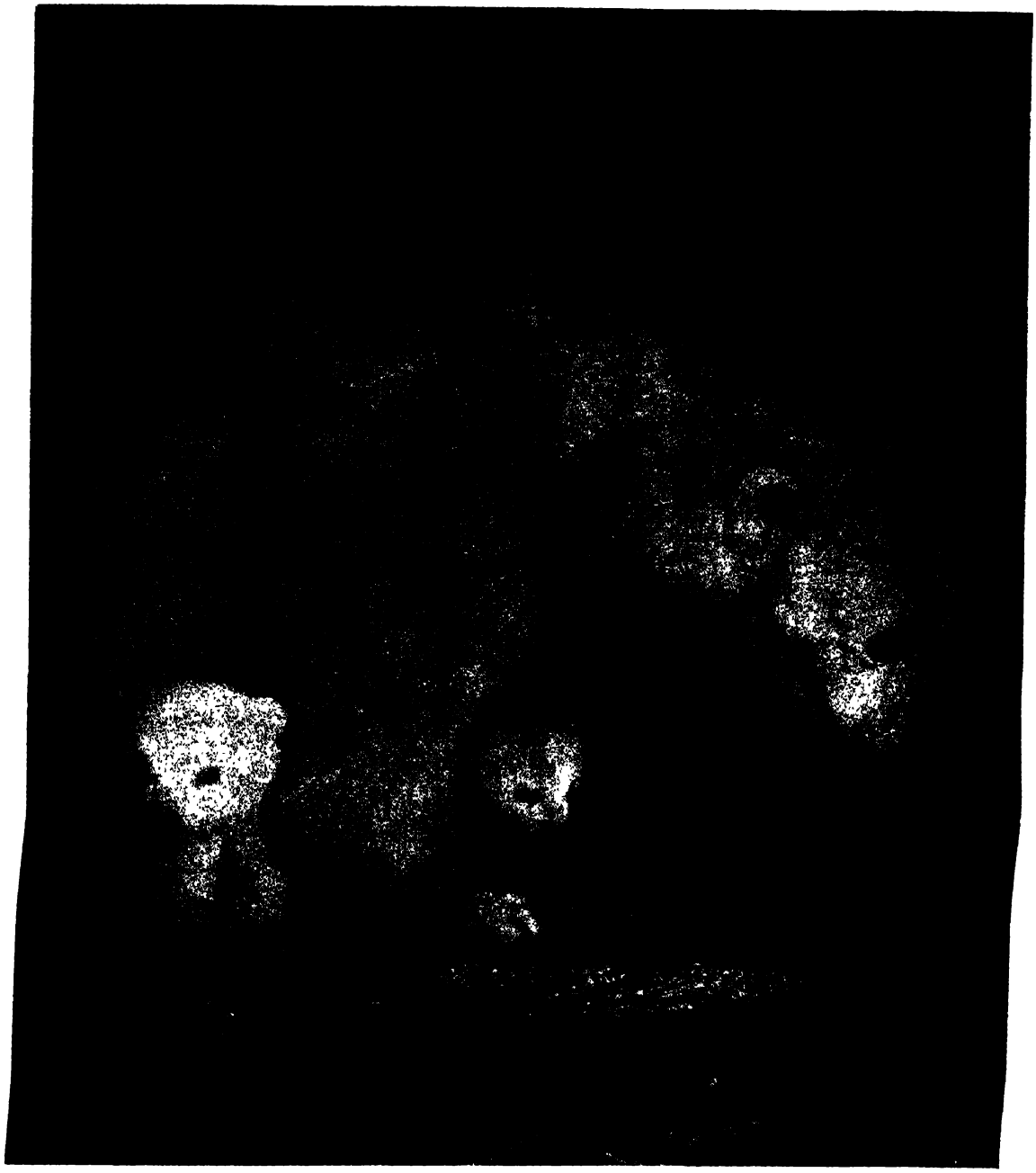
Bee. A four-winged insect of which some 12,000 species are known. The special part of the bee is that used for extracting nectar and pollen from flowers. The social bees are those which live in colonies comprising the queens, drones and workers. They construct the cells of their nest from wax which they secrete in glands. The largest proportion of the bees in a nest are the workers (females). The chief social bees are the Humble (or Bumble) Bee (*q.v.*) and the Hive or Honey Bee. (*p.h.*).
All bees play a great part in the *pollination* (*q.v.*) of flowers, 1, 259–264
Pictures: 1, 260–264; 10, 297

Bee Bread. Wax used to build the cells in a hive; it is pollen collected from flowers by honey bees, 1, 259

Beech is one of the most beautiful of our trees. It is rather taller than the oak, with a straight trunk and smooth bark, and is densely covered with leaves in summer, 1, 397, 400
Picture: 1, 397

Beech Marten. A form of the weasel like animal marten. It is a tree

A POLAR BEAR AND HER CUBS



Mondiale.

Most easily distinguished of the different members of the *Bear* (see p. 34) family is the Polar Bear because of its white coat. Unlike most of the other bears the Polar Bear is not inclined to a vegetarian diet and lives on fish, seals and stranded whales, though it will also eat seaweed, and, in the summer, lichen and grass. Our photograph shows a Polar Bear with her two cubs, far from their native haunts, but under conditions which are entirely to their liking.

climber and is found in Southern Europe.

Beech Mast. The nuts or fruit of the beech tree, **1**, 371

Beech, Queen. Famous tree, 135 ft. high, that once stood in Ashridge Park, Hertfordshire, **1**, 331

Bee-Eater. Name of a migratory African bird that nests in holes in sandstone.

Beefeaters. Name given to the warders of the Tower of London. It comes from *buffetier* (one who waits at a buffet) and has nothing to do with the eating of beef. Name also given to the Yeomen of the Guard (*q.v.*).

Beefsteak Fungus grows out of the roots of old trees. It is good to eat, **1**, 360

Beemerang, 4,100 ft., is the name of a peak in the Blue Mountains of New South Wales.

Beer is a pleasant holiday resort near Seaton in south-east Devon.
Picture: **3**, 43

Bee Stings. As a first aid remedy, apply vinegar or lemon juice, **8**, 244
—what happens when we are stung, **1**, 260

Beet is a wholesome root vegetable. There are long and round sorts and the fleshy taproot is used. Some varieties are cultivated for their leaves (spinach-beet) while the sugar-beet is now largely used in the manufacture of our sugar.

Beethoven, Ludwig van (1770-1827). Of a Belgian family, but born at Bonn, he lived in Germany and became one of the world's greatest musical composers, **7**, 166, 168, 170
Pictures: The Birthplace of the Composer, **7**, 166
Dreamer of Wonderful Music, **7**, 167
Beethoven before his Piano, **7**, 168

Beetle. Common name of insects of the order *Coleoptera*. They include some of the largest as well as the most minute of insects. About 3,300 species are found in the British Isles. See also *Insect, Colorado Beetle.*

Beet Sugar is produced from a large white-fleshed variety of the ordinary beet-root which is largely cultivated in many parts of the world.
It was not until 1918, however, that the Beet Sugar industry really began in England, though experiments had been made in its cultivation during the previous ten years. It has now become, under Government encouragement and subsidy, an important and valuable industry.
Experimental work by the scientists has increased the sugar content of the root from 9 or 10% to nearly 20% and the general target now aimed at is 16% for average crops, **9**, 414
Pictures: Experiments in Plant Growth, **1**, 391
Making Sugar from Beet, **3**, 63

Beggar Maid, The. A Poem by Lord Tennyson, **9**, 99

Begonias are half-hardy perennial plants. They grow in two distinct forms, the tuberous-rooted and the fibrous-rooted.

Behaim, Martin (*c.* 1436-1506). A German navigator who settled in Portugal. He devised new navigation tables, and was one of the first to construct a globe showing the extent of the countries and oceans of the world as he believed them to be. See *Maps.*
Special Colour Supplement: Geographical Terms, **9**, *between* 176 *and* 177 (Plate 4)

Behn, Aphra (1640 89) is generally regarded as the earliest English woman writer, **9**, 339

Beinn Ime is the name of one of the mountain peaks overlooking Loch Long in the Scottish Highlands.
Picture. **3**, 129

Beirut is a seaport of the Lebanon republic, on the Mediterranean. It is the most populated town in the country, **4**, 202

Beith, John Hay (1876 1952). Well-known soldier and British writer. Author of *The First Hundred Thousand* and of successful plays. Better known as Ian Hay

Bekhme Dam. This dam is being built on the Great Zab river, a tributary of the Tigris, as part of Iraq's plans for irrigating the desert regions of the country, **4**, 202

Belem, a port of the Amazons, is the capital of the Brazilian state of Para Belem itself is often called by this name, **2**, 339

Belemnites. Small, dart-like creatures with straight and tapering shells.
Picture **1**, 15

Belfast is the capital of Northern Ireland and contains the legislative buildings of the Parliament of Ulster The city is situated on Belfast Lough and is a great centre of the linen industry. It has vast shipbuilding yards and many other interests. The population exceeds 400,000, **3**, 144
Pictures. All Ready for the Plunge, **3**, 145
Donegal Place and the City Hall, Belfast, **3**, 146
Where Northern Ireland's Parliament Assembles, **3**, 148

Belfast Lough is a deep inlet from the Irish Sea in the centre of the east coast of Northern Ireland.

Belgian Congo. See *Congo, Belgian.*

Belgian Hare. A variety of domestic rabbit. It grows to a good size, **8**, 322

Belgium. A kingdom of Europe lying between France and Holland, with Luxembourg and Germany on its eastern side. The country is intensively cultivated and has many industries as well as coal mines. Brussels is the capital, **4**, 19 *et seq.*
- Belgium in the Second World War, **2**, 234, 248, 249
—Belgium's trade with Britain, **4**, 353
Pictures: The Belgian Countryside, **4**, 2
The Belfry of Bruges, **4**, 20
Brussels' Palace of Justice, **4**, 21
Held against Napoleon, **4**, 22
The Lion of Waterloo, **4**, 23
Fine Old Guild Houses in Brussels, **4**, 24
Broadcasting House, Brussels, **4**, 25
In the Belgian Ardennes, **4**, 26

Belgrade, standing where the Rivers Danube and Sava meet, is the capital of Yugoslavia, **4**, 93

Belize. The capital of British Honduras. It stands upon the river of the same name and has a population of more than 21,000, **3**, 400

Bell. An article of cast metal which gives forth a ringing noise when struck by a hammer. Bells have been known since history began and have always been associated with places of worship and religious life.
Curfew bells were first rung to give notice to the people that all lights and fires must be extinguished.
Big Ben at Westminster, Great Paul in St. Paul's Cathedral and Great Tom at Oxford are three of our famous bells.
Pictures The Bell Buoy Warning to ships, **5**, 111
Waves of Sound When a Bell Rings, **5**, 112

Bell, Alexander Graham (1847-1922). Inventor of the telephone. Born in Edinburgh, qualified as a doctor of medicine at Edinburgh University, he moved with his family to Brantford, Canada, in 1870 and was appointed lecturer at Boston University in 1874. Became professor of vocal physiology and continued the experiments begun at Brantford for the electrical transmission and reproduction of speech He patented an apparatus which in 1876 actually transmitted speech which was clearly heard over wires at Boston. The first public transmission over a line in which speakers and listeners were several miles apart was made in Aug. 1876, **6**, 189
Pictures Two Historic Telephones, **6**, 190

Bell, Henry (1767 1830) A Scottish engineer and inventor. He built the *Comet*, the first European passenger steamboat. The vessel plied on the River Clyde, **5**, 119, 122
Picture **5**, 120

Belladonna. Another name for Deadly Nightshade See *Nightshade.*

Bell Bird is a bird of Australia, so named from its silver-voiced call, **3**, 246

Bell Buoy. An appliance placed on dangerous reefs and in shallow channels to warn sailors. Sound travels well under water and the notes of the bell are picked up on board ship by microphone, **5**, 110
Picture: **5**, 111

Bell-Flower. A wild plant of the woodlands with nettle-like leaves, **1**, 304
—a name by which the campanula is known.

Bell Heather is a plant of the heath family having narrow, pointed leaves and reddish flowers.

Bell Mountain, or Campana, is a peak of the Andes, in South America, **2**, 346

Belle Alliance, La. The Belgian farm at which Wellington and Blucher met after the Battle of Waterloo (1815).
Colour Plate: **2**, *facing* 208

Belle Isle is an island off Cape Bauld, Newfoundland. It lies at the Atlantic entrance to the Strait of Belle Isle which separates Newfoundland from Labrador.

Bellem is the name given to a flat-bottomed boat of the kind seen on the River Tigris, **4**, 202

Bellerophon. Name given to several British warships in turn since 1794. Napoleon Bonaparte surrendered to the British on a man-of-war that was so named. Bellerophon was a hero

in the folklore of Ancient Greece, 2, 207
—ship on which John Franklin served in the Battle of Trafalgar, 2, 302
Picture: 2, 206
Bellingshausen, Fabian Gottlieb von (1778-1852). A famous explorer, he commanded a Russian expedition in the Antarctic, 1819-21. Bellingshausen Sea is called after him, 2, 366
Bellini, Jacopo (1400 68). A brilliant painter of Venice. He had two famous artist sons, Gentile and Giovanni, 7, 22
Picture: 7, 24
Bell Island lies off Newfoundland, to the south-east of Hare Bay and near the entrance to White Bay. From here iron ore is shipped to Nova Scotian steel works, 3, 161
Belloc, Hilaire (1870-1953). British writer of books of history, poetry, travel and adventure, 7, 256
Picture. 7, 259
Bell X1. An experimental American aircraft which was the first piloted aeroplane to fly faster than sound.
Picture: 5, 241
Belper is a town of Derbyshire, a centre of the cotton industry.
Belterra is the name of a large experimental rubber estate set up by the Ford Industrial Co in Brazil, 4, 316
Belvedere is the name of a beautiful structure at the Vatican in Rome From it a wide view is obtained, 7, 22
Benares is a state and city of the United Provinces of the Dominion of India It stands on the banks of the great Ganges river and is holy to the Hindus to whom it is a great place of pilgrimage, 3, 354
-the birthplace of James Brooke, 2, 325
Pictures. The Holy City of Benares, 3, 354
On the River Ganges, Benares, 3, 355
Benbecula is an island in the Outer Hebrides group between the islands of North and South Uist.
Picture 3, 137
Bencleuch is the loftiest peak in the Ochil Hills, Scotland It is 2,363 ft in height
Bendigo is a goldmining town in Victoria, Australia. It has a population of over 30,000 and is the centre of the richest goldmining region in Victoria, 3, 205
Picture. With the Gold Seekers, 6, 89
Benelux is a contraction frequently used in connection with international discussions for the three countries Belgium, Netherlands (Holland) and Luxemburg. They have many interests in common and therefore find it convenient to act together in matters affecting all of them, 2, 258, 414
Bengal. The name of a former province of India. It has now become (1) West Bengal, which is part of the Dominion of India and includes the important city of Calcutta (the former capital of Bengal), and (2) East Bengal, which is part of the Dominion of Pakistan and comprises the eastern part of the former province of Bengal with the addition of a district of Assam.
West Bengal has important jute and cotton mills and coal mines. East Bengal grows jute and rice and has sugar factories; there are also raw materials which have still to be developed.
—Clive and the Nabob, 2, 185, 186
—Clive, Governor of Bengal, 3, 311
Bengali. One of the many languages of India. It is spoken by some 50 million people in Bengal, 3, 311
Picture: Bengali Girl in Sari, 3, 318
Bengal Tiger. One of the finest types among these great cats.
Picture: 1, 48
Benghazi is a town and port of Cyrenaica, Northern Africa, a district that was formerly Italian.
Benguet is a region of the island of Luzon in the Republic of the Philippines. It is a rich gold-mining region, 4, 214
Beni Hassan is a place in Egypt famous for its paintings on the walls of tombs, 4, 196
Benin. A town of Nigeria in West Africa, once a centre of slave-dealing. The name is also given to the surrounding district and to a river.
Benjamin Tree. A shrub from which benzoin and gum Benjamin are obtained, 1, 334
Ben Lawers is a mountain of Perthshire, 3,984 ft in height.
Ben Ledi. One of the Perthshire heights, 2,875 ft It is near Loch Katrine.
Ben Lomond is a mountain of Stirlingshire adjacent to Loch Lomond. It is 3,192 ft in height, 3, 115, 128
Ben Lui. A mountain in the neighbourhood of Loch Lomond It is 3,708 ft. in height.
Ben Macdhui is one of the Cairngorm group of mountains in the Highlands of Scotland. It is the second loftiest peak in Great Britain, being 4,296 ft. in height, 3, 128
Ben More is a mountain of Perthshire more than 3,800 ft. in height.
Bennett, Arnold (1867-1931). This writer was born at Hanley, in Staffordshire, and his earliest works were intimate descriptions of life in the Potteries, 7, 248
Picture. 7, 251
Bennett, F G. An American airman; he flew over the North Pole in 1926 with Lieut.-Commander R. E Byrd, 2, 361
Bennett, James Gordon (1841-1918) An American newspaper proprietor. He bore part of the expense of sending Stanley to search for Livingstone, 2, 336
Bennett, Sir William Sterndale (1816-75). Born at Sheffield, he became President of the Royal Academy of Music. Gained much fame as a pianist and composer.
Ben Nevis is a mountain of Inverness-shire and the loftiest peak in the United Kingdom. It is 4,406 ft in height, 3, 128
Picture: 3, 127
Ben Rhydding. A small town and health resort in the West Riding of Yorkshire.
Bentham, Jeremy (1748-1832). English writer, his subjects being mainly law and political economy.
Ben Vane is the name of one of the mountain peaks overlooking Loch Long in the Scottish Highlands.
Picture: 3, 129
Ben Venue is a mountain of Perthshire in the neighbourhood of Loch Katrine, 2,393 ft. in height, 3, 124
Ben Vorlich. A mountain of Scotland at the northern end of Loch Long. It is 3,092 ft. high, 3, 129
Ben Wyvis is a mountain of Ross and Cromarty, Scotland. It is 3,429 ft. in height.
Benzene. A by-product of the gas-works largely used for removing grease from clothes and other articles, 6, 19
Benzine is also known as benzoline and petroleum naphtha. It is obtained by distilling petroleum oil.
Benzoin. An essence made from the sap of a small shrub known as the Benjamin Tree. Benzoin is used in perfumes and as an ingredient of certain medicines.
Benzole is obtained from coal during carbonisation in the gas-making industry. Mixed with petrol, it is used as a fuel for motor engines, but it has many other uses in industry, including the manufacture of dye-stuffs, plastics, and cosmetics, 6, 17
Beograd is another name for the city of *Belgrade (q.v.).*
Beowulf. Title of an Anglo-Saxon poem of the eighth century. It deals with the adventures of Beowulf, 7, 125, 9, 337
Bequeath means to leave by will. Anything which is bequeathed is a bequest.
Berbera is a large town and port of British Somaliland, in Africa. It carries on a big export trade.
Berberis. A family of beautiful shrubs most of which produce bright berries in the late summer.
Berchtesgaden is a small town of Germany, in the Bavarian Alps.
Picture: 4, 81
Berck. A health and holiday resort on the coast of Northern France
Beresford, Lord Charles William de la Poer (1846-1919). Son of the 4th Marquis of Waterford, he was one of Britain's great sailors. Commanded the *Condor* at the bombardment of Alexandria.
Beresford Dale is one of the beauty spots of the Derbyshire Peak District which is cared for by the National Trust
Picture. 3, 415
Bergamot. A sweet-smelling plant which bears bright red flowers. Its proper name is Monarda.
Bergen. An important seaport and town of Norway It is an important centre of Norway's fishing industry, 4, 38, 45
Pictures 4, 41
Bergville is a tourist centre of Natal from which trips to the Drakensberg Mountains are made, 3, 304
Bering Strait is a stretch of water separating Alaska in North America from Siberia in Asia. In the Strait are the Diomede Islands from which it is possible to see both continents, 3, 197
Berkhamsted is a town of Hertfordshire, mainly residential. It has a Tudor grammar school and remains of an old castle Birthplace of the poet Cowper
Berkshire is a county of England through which flows the River

Thames. The interests are mainly agricultural, but there are important industries in its county town of Reading. (*Abbrev.* Berks.)

Berlin. A city of north Germany on the River Spree and traditional capital of Germany. After the Second World War it lay largely in ruins and was occupied by the Allies who divided it into four zones—British, American, Russian, and French. Most of its notable buildings are in ruins and it has a total population of over 3,100,000, 4, 85
—occupied by Napoleon's troops, 2, 201
—heavily bombed, 2, 254
—entered by the Russians, 2, 256
—the Berlin crisis (1948), 2, 414
Pictures: A War-damaged City, 4, 85
The Tiergarten, Berlin, 4, 86

Berlioz, Hector (1803-69). French musician. A master in arranging music for orchestras, 4, 18; 7, 174–176
Picture. 7, 173

Bermudas, The. A group of British islands in the North Atlantic. The capital is Hamilton, 3, 387
Picture: 3, 387

Bernadotte, Count Folke. The Swedish diplomat who went to Palestine on behalf of UNO to mediate between Jews and Arabs (May 1948). Before he could make his report, Count Bernadotte was assassinated by Jewish extremists in September, 1948. His successor was Dr. Ralph Bunche, 2, 414

Bernadotte, Marshal. See *Charles XIV,* King of Sweden.

Bernard, Claude (1813–78). He discovered the purpose of the pancreas, the function of the liver in certain directions and the work of the thyroid gland.

Berne is the name of a canton or province of Switzerland. Its chief town, which is capital of the Confederation, has the same name and stands on the River Aar, 4, 53
Pictures: The Parliament House, 4, 54
The " Armoured Bear," 4, 55
Photo-tone Supplement: The Continent of Europe, 4, *between* 112 and 113

Bernese Oberland is a district of Switzerland. It has many resorts for tourists, 4, 62

Bernhardt, Sarah (1845–1923). A great French actress. She had a wonderful voice and vivid personality.

Bernina Valley is in the Engadine in south-eastern Switzerland. The name Bernina is also given to a pass over the Alps in this region and to a section of the Alps themselves.
Picture: 4, 59
Colour Plate: Cattle grazing beneath the Snow-clad Peaks of the Bernina Alps, 4, *facing* 53

Bernoulli, Daniel (1700–82), a member of a famous Swiss engineering family and a pioneer in Hydro-dynamics, 7, 360

Berries and Fruits of the Countryside.
Colour Plate: 6, *facing* 388. (*p.h.*)

Berthon, Edward Lyon (1813–99). Beginning as a surgeon he made a great name as an inventor. Perfected the collapsible boat that bears his name.

Berwick-on-Tweed forms a county by itself, but is in the County of Northumberland for the purposes of local government. It has a fishing industry. Berwick Bridge was built in the reign of James I, 3, 189
Picture: 3, 97

Berwickshire is a county of south-east Scotland, through which flows the River Tweed. Many sheep are raised on the hills and agriculture is the chief industry. The county town is Duns.

Berwyn Mountains form a range in Merionethshire and Montgomeryshire, North Wales. The highest point is Moel Soch, 2,713 ft., 3, 100

Berzelius, Jons Jakob (1779–1848). A famous Swedish chemist, he was the first to adopt the symbol system for alluding to chemical substances.

Besant, Sir Walter (1836–1901). British writer. In conjunction with James Rice, he produced many well-known books. An authority on London, he also wrote of Captain Cook, 2, 314

Bessarabia. A district of Rumania along the Russian frontier which was ceded to the Soviet Union in 1940 and which is now partly in the Ukrainian Soviet Republic, but mostly in the Moldavian Soviet Republic. It is a very fertile region, 4, 102

Bessel, Friedrich Wilhelm (1784–1846). A German astronomer, he is counted the father of modern astronomy by observation.

Bessemer Converter. An appliance for blowing iron into steel. It is about 20 feet in height and weighs 200 tons, 6, 57
Pictures: 6, 58

Bessemer, Sir Henry (1813–98). He was born at Hitchin, Herts., and discovered that atmospheric air was capable of converting cast iron into malleable iron. Within four years of the establishment of his works at Sheffield his process was in use throughout the world, 6, 57

Betelgeuse. Name of a star in the constellation of Orion. It is 186 light years away from us, 5, 96

Betel Nuts are obtained from the areca variety of palm tree. They are chewed by the Burmese and other native races, 4, 222

Bethesda, Carnarvonshire, is a centre of the slate-quarrying industry, 3, 100

Bethlehem is a town of the Holy Land or Palestine. It was the birthplace of Jesus Christ.
Pictures: A View in " Royal David's City," 4, 179
Where Christ was Born, 4, 181
Photo-tone Supplement: Scenes in the Holy Land, 4, *between* 176 and 177

Bethlehem is a town in Chile. Near it are important iron ore mines, 4, 324

Bethlehem is the name of a monastery built in Portugal in 1497 in honour of Vasco da Gama. It is still standing, 2, 293

Bethune. A town of Northern France in a noted colliery district. It was a battlefield in the war of 1914–18.

Bettwys-y-Coed, Carnarvonshire, is one of the beauty spots of North Wales, 3, 106
Picture: 3, 104

Beveridge, William Henry, 1st Baron (born 1879). Administrator and economist. Chairman of Committee on Social Insurance and Allied Services, 1941–42. On this Report our present National Insurance Acts are based, 2, 415

Beveren is the name of a variety of domestic rabbit kept mainly for its pelt or skin, 8, 322

Beverley. A town of the East Riding of Yorkshire noted for its Gothic Minster. The name means " beaver lake."

Beverly Hills is the name of a district on the seaward side of Hollywood, California, where film stars make their homes.

Bevin, Ernest (1881-1951). Well-known Labour leader, he was Minister of Labour and National Service in the Coalition Government 1940–45. On the formation of the Labour Government in 1945 he became Foreign Secretary. Resigning for health reasons, he became Chancellor of the Duchy of Lancaster, but died in April, 1951.

Bewick, Thomas (1753–1828). A great naturalist and one of the most famous of English wood engravers.

Bexhill is a town, holiday resort and residential centre of Sussex.

Bhamo is a town of northern Burma standing on the River Irrawaddy at the point where navigation on that mighty river ceases, 4, 222

Bhopal. A large state in Central India and in the Indian Union. Its capital, of the same name, is a centre in the cotton industry, 3, 326

Bhuj is the capital of Cutch, a state in north-west India.

Bhutan. A state of the eastern Himalayas. It is a mountainous and richly forested country, with agriculture as the main industry. Punakha is the fortress capital. The natives are known as Bhotias, 3, 312, 352

Biafra, Bight of. This is the name of a broad bay of the Gulf of Guinea, West Africa, 3, 379

Bialystok is a town of Poland, the name being also given to a district of that country.

Biarritz is a famous French resort on the Bay of Biscay. It was a favourite Continental watering-place of Edward VII.

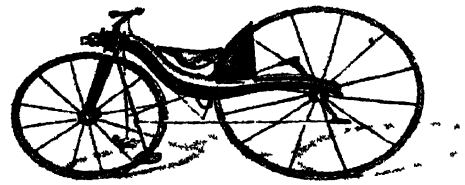
Bib. A variety of fish found in British waters. Generally called the pout (*q.v.*)

Bible, The, is a collection of writings or books consisting of 39 in the Old Testament and 27 in the New Testament. It is a record of God's teaching to man. The Old Testament contains the books regarded by the Jews as the Law; the Prophets; and the Sacred Writings. The New Testament contains the Gospels, the Acts, the Epistles, and the Revelation or Apocalypse
The original manuscripts of these books no longer exist, but early translations of the Old Testament were made in Latin, while the New Testament was written in Greek. The earliest translations of some portions of the Bible into the English language were made from the Vulgate (*q.v.*) and the first full version by Wycliffe was from this Latin translation. Tyndale trans-

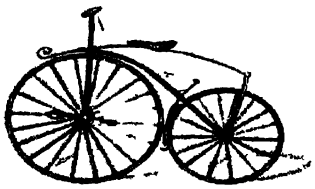
HOW THE BICYCLE HAS PROGRESSED



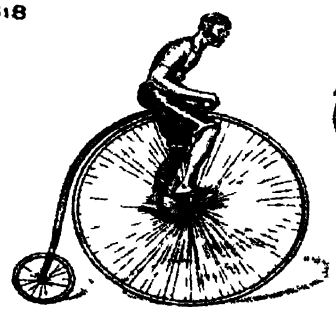
THE HOBBY HORSE 1818



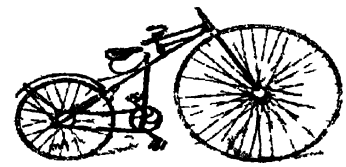
MACMILLAN'S LEVER-DRIVEN BICYCLE 1839



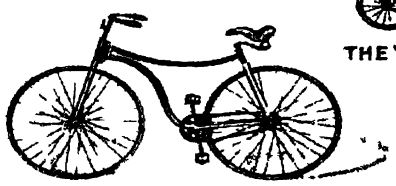
MICHAUX VELOCIPEDE 'BONESHAKER' 1869



THE "PENNY-FARTHING" 1880



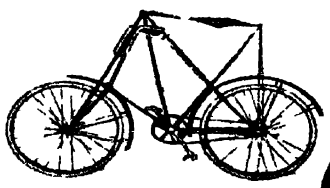
LAWSONS "BICYCLETTE" 1879



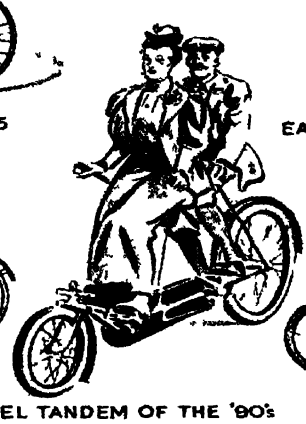
"ROVER" SAFETY BICYCLE 1885



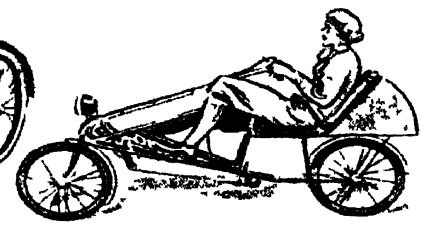
EARLY PNEUMATIC-TYRED BICYCLE 1890



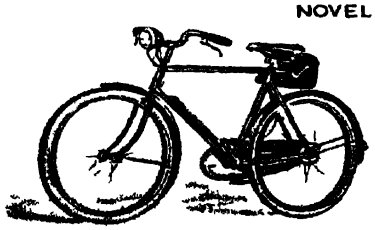
DURSLEY PEDERSEN CANTILEVER BICYCLE 1900



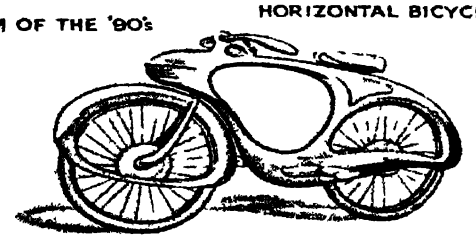
NOVEL TANDEM OF THE '90's



HORIZONTAL BICYCLE 1933



MODERN ROADSTER



A STREAMLINED MACHINE MADE OF PRESSED ALLOY 1947

Specially drawn for this work

The earliest two-wheeled machines for riding were propelled by pressing the feet against the ground, but the first pedal machine appeared in 1839. It was the invention of the pneumatic tyre by Dunlop around 1888 that really popularised the *bicycle* (see p. 40). New inventions such as the free-wheel and other improvements have been made since then and to-day the number of bicycles in use throughout the world runs into many millions.

lated the New Testament into English from the original text and left other books also translated. Miles Coverdale's Bible was the first complete translation.
James I called a conference at Hampton Court and the result was our present Authorised Version of the Bible which is in regular use to-day. Revised versions of the New Testament (1881) and the Old Testament (1884) have also been published, **2**, 158, 407; **9**, 339
Picture: The First Authorised Version, **2**, 159

Bible in Spain, The. The title of a book by George Borrow (*q.v.*) containing a record of his adventures in Spain as agent of the Bible Society, **2**, 348

Bible Society, founded in London, 1780, employed George Borrow as one of its travelling agents, **2**, 348

Bibury is a picturesque village in Gloucestershire.
Picture: **3**, 78

Biceps is the name given to the muscle we have in the front part of our upper arm, **8**, 212
Picture **8**, 214

Bicester (*pron.* Bis-ter) is a town of Oxfordshire. It is a centre for hunting.

Bichat, Marie François Xavier (1771–1802), born at Thoirette, France Originated the term Vitalism. Founder of histology, the science of the tissues.

Bicycle. A machine consisting of two wheels, one behind the other. The first bicycle to be propelled by cranks and pedals driving the back wheel was devised by Kirkpatrick MacMillan of Courthill, 15 miles from Dumfries, in 1839. This was an improvement on the Hobby or Dandy Horse which was propelled by pushing along the ground with the feet
The invention of the pneumatic tyre in 1888 made the bicycle much more popular, and other improvements such as the free-wheel have increased its popularity, **9**, 344
—Formation of cycling associations, **2**, 222
Picture: **10**, 39

Bideford is a famous town and port of north Devon. Here Kingsley wrote *Westward Ho!* **3**, 51

Bielgorod is a manufacturing town of the Soviet Union in the Province of Kursk.

Bienne. A town of Switzerland, in the canton (province) of Berne, famous for its clocks and watches, **4**, 61

Biennials are plants having a life-cycle of two years. From seed sown one spring plants are produced to blossom twelve months later, after which they die, **8**, 278

Biga was the name given by the Romans to a two-horsed chariot.

Big Ben is the name by which the great bell in the Clock Tower of the Houses of Parliament has been known since it was first hung in 1856. It did not begin to chime until 1859 when the clock and bell first went into service. It was named after Sir Benjamin Hall who was First Commissioner of Works at the time, **9**, 412. (*p.h.*)
Pictures: Big Ben with Its Microphone, **6**, 211
The Home of Big Ben, **9**, 413
Pennies on the Pendulum, **10**, 85
Colour Plate: Westminster Bridge and Big Ben, **3**, *Frontispiece.*

Biggleswade is a town of Bedfordshire, a centre of the farming and vegetable-growing industries.

Bight is a term used in geography to indicate a bend in the coast that forms a bay.

"Big Inch" is the name of the pipeline which carries oil from Longville, Texas, to Norris City, Illinois, U.S.A., **4**, 274

Big Muddy is the nickname given to the Missouri River of the U.S.A., **4**, 293

Big Steamers, a Poem by Rudyard Kipling, **9**, 86

Bihar. A province of the Dominion of India. Patna is the capital, and within the province is the important iron and steel town of Jamshedpur (*q.v.*). There is coal in the district of Manbhum and Hazaribagh and iron ore at Singbhum. Mica is also obtained. Rice, maize, and oilseed are grown, **3**, 314

Bikanir. A state of Rajasthar in the Union of India. The capital is a place of the same name and is an oasis city in the Thar Desert, **3**, 342

Bilbao is a port of the north coast of Spain from which iron ore is shipped, **4**, 13; **6**, 42

Bilberry. Another name for *Whortleberry* (*q.v.*).

Bile is a fluid secreted by the liver, **8**, 226

Billet. A thick, square-cornered bar of metal shaped in a rolling-mill. Metal plates and small bars are made from billets by further rolling.

Bill Hook. An implement used by gardeners and farm workers for hedging, cutting down undergrowth, etc. It has a straight-edged heavy knife, but the end is drawn into a point or hook.

Billingford. There are two villages of this name in Norfolk, one near Foulsham, and the other near Diss.
Picture: **3**, 60

Billiton is an island of the Dutch East Indies, a great source of tin.

Bill of Health is a document given by the port authorities to the captain of a ship before he sails. If there is no infectious sickness in the port a clean bill of health is issued. When there is infectious disease in the port the bill is said to be foul and then the captain would not be able to enter another port, his ship being put in quarantine until the authorities are satisfied there is no risk.

Bill of Lading. A document given by the shipowner to one who is shipping goods by his vessel. It is a receipt for goods taken on board and also a contract that the goods will be carried and payment for so doing will be made; it also states to whom the goods rightly belong.

Bilston. A town of Staffordshire, the centre of heavy industries in a coal-mining district.

Bindweed is the common name for the wild white convolvulus, **1**, 302
Picture: **1**, 302

Bingen is a town of Germany, standing on the Rhine. Here, on a rocky islet in the Rhine is the Mouse Tower associated with Bishop Hatto, **4**, 70

Bingham is a town of Utah, U.S.A. Here is one of the world's largest copper mines.

Binnacle. The name given to the column or stand which supports a ship's compass. Its compass bowl, in which the compass card turns, is covered by a hood with a glass window in the front and back, and a lamp on each side for illuminating the card at night.

Binturong. An animal of the civet-cat tribe. It is found in India.

Binyon, Laurence (1869–1943). He made a great name as an English poet. He wrote the famous ode *For the Fallen,* **7**, 156

Bio-Bio is the main river of Chile. It is 237 miles long. The longest river is the Loa (275 miles), **4**, 324

Biographer. One who writes an account of another person's life. Boswell is famous as the biographer of Samuel Johnson.

Biology is the science which studies the nature, origin and structure of animals and plants.

Birch. A tree with slender branches and graceful foliage. Peeling of the bark is one of its characteristics, **1**, 404
Pictures Birch in Summer, **1**, 320
Birch in Winter, **1**, 320
Silver Birch, **1**, 319, 401

Birchington is a seaside town and residential centre on the Kentish coast near Margate.

Bird. Birds are defined as warm-blooded, feathered, vertebrate animals which lay eggs They are bipeds and their forelimbs have been transformed into wings which in almost all cases enable them to fly In proportion to their size they have huge appetites and this fact is of importance to man since they eat large numbers of insects which threaten man's own food supply. Pictures of many different types of birds are given in the section *Birds and Their Ways,* **1**, 163 *et seq.*; **9**, 366
The different birds are indexed in this volume under each bird's name.
Colour Plate: A Collection of British Birds' Eggs, **6**, *facing* 396
Colour Supplement: British Wild Birds, **1**, *between* 160 and 161

Bird-Bath. How to give the wild birds in the garden a bath to themselves, **1**, 206

Bird Cherry. A form of wild cherry tree which blossoms towards the end of April. The fruits are bitter.

Bird-eating Spiders are found in Brazil, **2**, 340,

Bird's Egg, the Marvels of a. The characteristics of many sorts of eggs, **1**, 167 *et seq.*
what is the use of spots on birds' eggs? **1**, 167
Colour Plate: A Collection of British Birds' Eggs, **6**, *facing* 396

Bird's Eye. Another name for Speedwell (*q.v.*).

Bird Flower. Found in the Australian "bush," this flower is green in colour, **3**, 248

Bird-Man. Name given to Nigerians who disguise themselves as birds when hunting.
Picture: **2**, 323

Bird Migration. Many different kinds

of birds make a long or short journey twice each year. The swallow and cuckoo are the best-known examples but there are very many others. Various theories have been put forward but the subject remains one on which no definite reason can be given and the marvel that small birds can fly such great distances remains, and many questions are still awaiting an answer.
The different types of birds in this country can be divided into six classes: Permanent residents; Summer residents; Winter visitors; Passage visitors which stay for a very brief period on their journey elsewhere; Irregular visitors, which come only occasionally; and Spasmodic visitors which will come in large numbers in one season but not visit us the next, **1**, 174
Pictures: Migrating Birds, **1**, 176

Birds, The Royal Society for the Protection of, was incorporated by Royal Charter in 1904 for the scientific and useful preservation of birds. There is a Junior Bird Recorders' Club for the guidance and encouragement of young bird watchers. The Society's headquarters are 82 Victoria Street, London, S.W.1.

Bird's-Foot Starfish. In appearance this marine creature is like the foot of a sea bird. It is found off the coasts of Britain, **1**, 234

Bird's Foot Trefoil. Wild plant, the leaves of which grow in threes, **1**, 306
Colour Plate **1**, *between* 304 and 305 (Plate 2)

Birds' Nests, All About. The different types of nest, the materials used and how nests are constructed, **1**, 163 *et seq.*
—largest birds' nest, **9**, 366
Picture. Where Birds Keep House, **9**, 365

Birdum is a township of the Northern Territory of Australia. Here the railway from Darwin ends, and here the Defence Highway to Alice Springs in the south begins, **3**, 226
Pictorial Map. **3**, 342

Biremes were warships of the early Greeks and Romans. They had two banks, or rows, of oars on each side, **4**, 132

Birkenhead. A large port and shipbuilding centre on the Cheshire bank of the Mersey. It is connected with Liverpool by a tunnel, **3**, 72

Birmingham is a city of Warwickshire, spreading into Staffordshire and Worcestershire. It is the business heart of the Black Country and has many splendid buildings. It is the second largest city in Britain, and its population exceeds 1,000,000, **3**, 74
—raided during the Second World War, **2**, 399
—its water supply, **3**, 102; **6**, 251
Pictures: In the Elan Valley, **6**, 251
Water for a Great City, **6**, 252
Birmingham City Hall, **10**, 43

Birmingham, Alabama, is the largest city in that U.S.A. state. Because it has large steel plants it is sometimes called "Pittsburgh of the South."
Picture: **4**, 278

Birmingham, George. See *Hannay, J. O.*

Birth Certificates. Before 1836 the only registers of births were kept by parish clerks but in that year civil registration was made compulsory. The birth of every child must be registered within 42 days at the local registrar of births, deaths and marriages and a certificate can then be obtained for a small fee.
The English Registers of Births has existed at Somerset House, London, from 1837 and copies of certificates can be obtained there or from the local registration officer of the district in which the person was born, **9**, 36

Biscay, Bay of. A bay found by the western coast of France and the northern coast of Spain. It is famous for its rough weather, although its seas are sometimes quite calm. The name Biscay is also given to a district of Spain.
Picture: **5**, 30

Biscoe, John, R.N. A British sailor who explored in the Antarctic in 1837. Biscoe Islands are named after him, **2**, 366

Biscuit is the name given to the material from which gramophone records are moulded, **6**, 172

Biscuits. The word is French for "twice baked," a method by which biscuits were at one time prepared

Bisharin. The name of an Arab people who live in the area between the Red Sea and the Nile. They are typical Nubian desert Arabs
Pictures: **4**, 192

Bishop Auckland is a town of County Durham. Its main interests are iron-works and coalmining.

Bishop's Apron and Hat Strings are survivals from the past, **9**, 319

Bishopsgate was one of the entries to and exits from the City of London. It was pulled down in 1760, **3**, 14

Bishop's Stortford. A small market town of Hertfordshire, **3**, 65

Bishop's Weed. See *Ground Elder.*

Biskra A port of Algeria from which the dates of the southern desert region are shipped, **4**, 166

Bismarck. A German battleship sunk by ships of the Royal Navy in 1941, **2**, 252

Bismarck, Prince Otto Edward Leopold von (1815–1898). The most prominent of German statesmen in the nineteenth century and the real founder of the united Germany which was formed in 1870 under the leadership of Prussia whose king became Emperor of Germany. Known as the "man of blood and iron" Bismarck imbued the German people with the belief that they were the master-race of Europe.
Under his leadership Germany also became a great industrial nation while numerous social reforms were introduced, including accident insurance and old age pensions. As the Iron Chancellor he became the most powerful statesman in Europe between 1870 and 1890. He quarrelled with the young Emperor, William II, who dismissed him from office in 1890, **2**, 246; **4**, 10, 76 *et seq.*

Bismarck, on the River Missouri, is capital of the U.S.A. state of North Dakota.

Bismuth is a white metal, one of the elements. It is heavier than iron and copper and melts at a lower temperature than lead. It is mixed with tin and lead to make soft solders, and is also largely used in medicine.

Bison. An animal found in the mountains of eastern Europe. It has a fatty hump on its shoulders. This European bison is now almost extinct. The name is also given to the buffalo of America, **3**, 176
Picture: The American Bison, **3**, 155

Bites. For a dog bite pour iodine over the wound or wash in water containing antiseptic. A doctor should be consulted. For an adder bite, keep the limb hanging down and try to make the wound bleed. The wound may be sucked, for the poison is harmless when taken into the mouth, unless there are sore places on the mouth, **8**, 234

Bittern. A wading bird; member of the heron family. It stands about 30 in. in height and is found chiefly in the Fen district or in marshy country. The male has a curious booming cry, said to be probably the loudest call of any bird heard in Britain. The smaller American Bittern and the Little Bittern are occasional visitors to this country.

Bitter-Sweet. A trailing and climbing shrub often found in hedgerows. It has dark green leaves and bears egg-shaped scarlet berries. These berries are poisonous. Member of the Solanum family, **1**, 344

Bituminous. Containing or yielding bitumen, which is a mineral substance of a resinous or gummy nature, easily bursting into flame. There is bitumen in the coal we burn in our homes. Naphtha, tar and asphalt contain it in different forms, **6**, 4

Bivalve. A shellfish or mollusc having two shells, such as the oyster, **1**, 227

Biwa is the name of the largest lake in Japan. It is on the Island of Honshiu, **4**, 258

Bjerknes. The name of two Norwegian meteorologists (father and son) who evolved the polar front theory of depressions, **5**, 19

Bjornson, Bjornstjerne (1832–1910). A famous Norwegian dramatist and poet. He received a Nobel Prize in 1903.

B.L. means Bachelor of Law, or of Letters. It is also a contraction for Bill of Lading (*q.v.*).

Black Arches Moth. One of the varieties of moth which can be taken by "assembling," **8**, 285
Picture: **8**, 282
Special Colour Supplement. British Moths, **8**, *between* 288 and 289

Black, Joseph (1728–99). Scottish chemist. He established a high reputation by his theory of latent heat.

Black-Backed Gull. See *Great Black-Backed Gull.*

Black-Backed Jackal. A variety of jackal having a coat of black and white. It is found in South Africa.

Black Bear. See *Bear, Black.*

Blackbeetles. See *Cockroaches.*

Blackberry. Bush which grows wild in most parts of the country, though

there are several cultivated varieties. The blackberry bush is also known as the bramble.
—how it propagates from trailing branches, 1, 280
—how it climbs, 1, 305
—how it spreads in New Zealand, 1, 336
—spreading in N. America, 1, 338
Pictures: Flowers and Fruit Together, 1, 337
Spray of Berries, 1, 347
Colour Plate: 1, *between* 304 and 305 (Plate 4)

Blackbird. Name of a bird found all over Europe, in Asia and N. Africa; also acclimatised in Australia and New Zealand. Plumage of the male is deep black, but female is dark brown. The song is somewhat similar to that of the song-thrush, both birds belonging to the same family.
Picture: 1, 173
Colour Plate: 1, *between* 160 and 161 (Plate 1)

Blackboy. The name of a curious grass tree which grows in Australia.
Picture: 3, 246

Blackburn, Lancashire, is one of the centres of the cotton-weaving industry, 3, 86

Blackburn Bluebird. Name of a famous type of British aeroplane.
Picture: 5, 206

Blackcap. A small warbler bird. The male bird has a black cap and its song is very sweet and prolonged. The cap of the female is chestnut in colour. The blackcap is a summer visitor to England, arriving in spring and leaving in autumn.
Picture: 1, 185

Blackcock. A variety of grouse found in Scotland and Northern England.

Black Country is the name given to a busy manufacturing area of the Midlands of England. It derives its name from the smoky atmosphere, and may be said to embrace Wolverhampton, West Bromwich, Wednesbury, Dudley and other centres, 3, 71 and 73; 9, 309

Black Death. Name given to the Great Plague that swept through England, 2, 125, 404

Black Deeps is the name of a fathomless pit in the North Sea. Here dredged material from the Thames is dumped, 8, 86

Black Douglas. A staunch and tried friend of Robert Bruce, King of Scotland, 2, 114

Black Douglas was an Australian bush-ranger who robbed the diggers as they brought in their gold from the fields, 3, 205

Blackdown Hills are in Somerset and form one of the boundaries of the Plain of Somerset, 3, 56

Black Face Sheep are a breed found especially in the southern uplands of Scotland. They can live on the higher and more exposed pastures and form some sixty per cent of all the sheep in Scotland.
Picture: 3, 113

Blackfeet is the name of a tribe of Red Indians.

Blackford. A picturesque village near Minehead in Somerset. It forms part of the Holnicote Estate which is National Trust property, 3, 414

Black Forest is the name given to a forested mountain range of south-western Germany. It is a popular touring region, 4, 70
Pictures: The Rolling Landscape of the Black Forest, 4, 74

Black-Headed Gull. Member of the family of Herring Gulls, common round British coasts.
Picture: 1, 164
Colour Plate: 1, *between* 160 and 161 (Plate 1)

Black Hills are a range of mountains partly in South Dakota and partly in Wyoming, U.S.A. Remarkable effigies of such famous persons as George Washington have been carved on the rock face in these hills.
Picture: 4, 282
Photo-tone Supplement: Famed in America's Story, 4, *between* 272 and 273

Black Hole of Calcutta. A dungeon in which 146 people were confined by the Nabob of Bengal, 1756. In the morning only 23 of the prisoners were alive, but Clive avenged the deed, 2, 185, 409

Black Lead contains no lead. It is a mineral called graphite or plumbago, found in different parts of the world. It is used for glossing grates, making pencils and as a lubricant for certain machinery, 9, 412

Black Leopards. See *Leopards, Black.*

Blackmore, Richard Doddridge (1825–1900). An English novelist, he was born in Berkshire. His best-known work is *Lorna Doone* whose setting is Exmoor, 7, 219
Pictures: 3, 44, 411

Black-Necked Grebe. A small water-bird that builds a floating nest of water-weed anchored to rushes.
Picture: 1, 166

Blackpool, Lancashire. Noted holiday seaside resort. It has splendid sands and every type of amusement, 3, 86
Picture: 10, 47

Black Prince. Name given to Edward, eldest son of Edward III. He blackened his armour, hence the name.
—he rewarded Sir Thomas Danyers with the lands of Lyme Hall, 3, 410
Picture: Tomb of the Black Prince, 7, 305

Black Rat. See *Rat, Black.*

Black Redstart. See *Redstart.*

Black Sea is the name of a large stretch of water east of Rumania and Bulgaria and virtually separating Europe from Asia. Turkey, the Soviet Union, Rumania, and Bulgaria all have ports on its shores, and it contains that part of Soviet Russia known as the Crimea. Its exit to the Mediterranean is by way of the Bosphorus, 4, 96 *et seq.*

Black Stream, or Kuro Siwo, is a current off the coast of Japan in many ways the counterpart in the Pacific of the Gulf Stream in the Atlantic.

Black Swan. A large bird, at home in Australia; sometimes seen on ornamental waters in this country.

Blackthorn. Name given to the Sloe (*q.v.*).

Blackthorn Winter is the term applied to the period in spring when the sloe or blackthorn is in blossom, 1, 306

Blackwater is the name of several rivers in Great Britain. One is a tributary of the Thames, 3, 33

Bladderworts. Many of these plants have pitcher-like vessels in which to entrap insects, 1, 340

Blaeberry. Another name for *Whortleberry* (*q.v.*).

Blaenau Festiniog, Merioneth, is a centre of the slate-quarrying industry, 3, 100
Picture: 3, 101

Blaenavon, Monmouthshire. One of the coal, iron and steel towns of the South Wales area, 3, 94

Blair Atholl is a small town of Perthshire. It is near the noted Pass of Killiecrankie.

Blair Castle. Scottish seat of the Dukes of Atholl where countless larch trees have been planted, 1, 321

Blairgowrie is a town of Perthshire, the centre of an agricultural district. Also interested in jute manufacture.

Blake, Robert (1599–1657). Son of a merchant, he became General of the Seas under Cromwell. Greatly distinguished himself in the war against Holland and beat Van Tromp off Dover, 2, 168; 8, 8

Blake, William (1757–1827). A remarkable poet and painter. His lyrics are simple in their beauty while some of his prophetic and longer works are difficult to understand. His paintings and illustrations are vivid and powerful. He is best known for his *Songs of Innocence* (1789) and *Songs of Experience* (1794). His most celebrated illustrations are those which appeared in Young's well-known *Night Thoughts*, 7, 274

Blanc, Mont. See *Mont Blanc.*

Blanchard, Jean Pierre (1753–1809). With another aeronaut, Jeffries, he was the first person to cross the English Channel by air. This he did in a balloon in 1785.

Blanchart Race is a tidal "race" between the Channel Islands and the French coast, 5, 34

Blandford. A market town of Dorsetshire to the south of Shaftesbury.
—Damory's Oak, 1, 331

Blankenberghe. A holiday centre on the Belgian coast near Ostend, 4, 26

Blankenburg. A town of Brunswick, Germany. It is a tourist centre of the Harz Mountains.

Blanket Stitch is a form of sewing specially useful when making cot covers, tea cosies and hot-water bottle covers, 8, 395
Picture: 8, 396

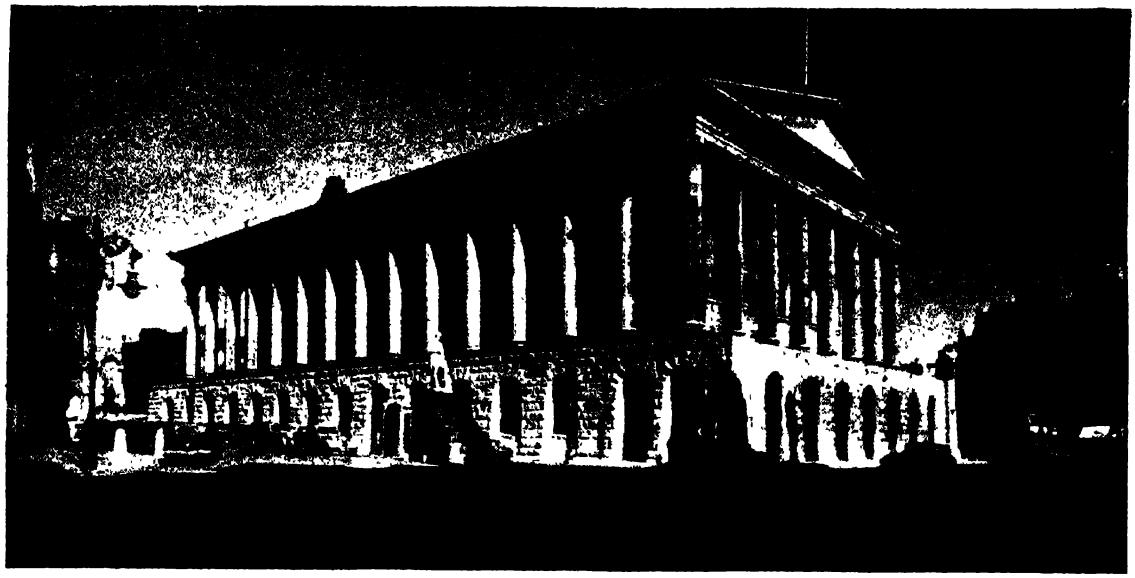
Blank Verse is the term applied to poetry in which the lines do not rhyme; a ten-syllable line with five stresses, 9, 339

Blantyre. (1) A town of Lanarkshire. It was the birthplace of Dr. Livingstone. (2) A town at the south of Nyasaland, called after its namesake in Scotland.

Blarney Stone is a stone set at the top of the tower of Blarney Castle, County Cork, Eire. To kiss the stone is said to give one the power to speak flatteringly.
Picture: 3, 152

Blast Furnace. A round tower from

BRITAIN'S SECOND LARGEST CITY



Birmingham Corporation

The second largest city in Britain is *Birmingham* (see p. 41) and it is probably the greatest manufacturing centre in the world. Its principal industry is metal-working, and almost everything from pins and needles to railway engines and motor-cars is produced here. In the photograph above is seen the centre of the city's civic life, the Birmingham City Hall.



Planet News.

Queen of the Iceni, a tribe of East Britain, *Boadicea* (see p. 44) was brutally treated by the conquering Romans. She succeeded in raising a strong army and with her daughters severely defeated the Romans after burning their cities. A stronger Roman force eventually overthrew her and Boadicea poisoned herself (A.D. 62). This statuary by Thomas Thorneycroft is on the Victoria Embankment, London.

70 to 120 ft. in height, in which iron is smelted, 6, 46
Pictures: The Modern Blast Furnace, 6, 43
Keeping the Furnace Filled, 6, 45
Tapping Britain's Largest Blast Furnace, 6, 46
At Britain's Largest Steelworks, 6, 55

Bleeding is a very serious matter in accidents and an artery may have to be firmly compressed to control it, 8, 236
Pictures: Pressure Points for Control of Bleeding, 8, 233
Bleeding Arrested by Pressure at a Joint, 8, 234
Bleeding from the Arm or Hand, 8, 235
Points, Bandages and Reef Knot, 8, 237
Nose Bleeding, 8, 236, 238

Bleeding from a Tooth, which often occurs after extraction, should have this first aid treatment: Plug the hole with cotton wool soaked in lemon juice or peroxide of hydrogen or some other disinfectant and place a pad over it, 8, 236

Bleeding Heart. Popular name for the perennial plant *Dielytra* (*q.v.*)

Blenheim, Battle of (1704). One of Marlborough's greatest victories. Fought against the French near the village of Blenheim, on the banks of the Danube, 2, 176, 408

Blenheim House, near Woodstock, Oxfordshire. With its Park (twelve miles round) it was given by Parliament to John Churchill, Duke of Marlborough.

Blenkinsop, John (1783–1831). A British engineer and inventor, he was a pioneer in building locomotives, 5, 122
Colour Plate: Blenkinsop's Engine built in 1812, 5, *facing* 128 (Plate 1)

Bleriot, Louis (born 1872). A pioneer French airman, he made the first flight across the Channel from France to England on July 25th, 1909, 5, 194
Picture: First Across the Channel, 5, 194

Bletchley, a town of Buckinghamshire, is an important railway junction.

Blickling Hall is in the village of the same name, near Aylsham, Norfolk. The building was begun in 1620 by Sir John Hobart, 3, 415

Bligh, William (1754–1817). Famous English admiral, he sailed with Cook on his voyage round the world. Before then as Captain of H.M.S. *Bounty* he was turned adrift in an open boat by his mutinous crew in the Indian Ocean. With eighteen of the crew he succeeded in reaching land after seven weeks at sea.
Some of his mutinous crew sailed to Pitcairn Island in the Pacific and there founded a British colony, 3, 391

Blind-Worm. Name often given by country people to the Slow-Worm (*q.v.*).

Bliss, Arthur (born 1892). British musical composer of outstanding skill and high ideals, 7, 193

Blitz. Abbreviation for German *Blitzkrieg* (lightning war) and popularly used by British people for heavy air attacks on our cities during the World War, described in *Their Finest Hour*, 2, 247, 393 *et seq.*

Blizzard. A fierce gale laden with fine, blinding snow.

Bloater is the name given to a herring when salted. Great Yarmouth is the chief centre for bloaters, 8, 78

Bloemfontein is the capital of the Orange Free State, Union of South Africa. It is also the judicial capital for the Union of South Africa.
Picture: 3, 302

Blondin, Charles (1824–97). A Frenchman, he became the world's most celebrated rope-walker. Crossed Niagara on a rope 1,100 ft. long and 160 ft. above water level

Blood consists of a clear fluid containing fuel material and repair material. It has white cells and disc-like red cells, and it circulates in the body all through life whether we are awake or asleep, 8, 213
Pictures: The Circulation of the Blood, 8, 215
What the Heart Does, 8, 217

Blood, Thomas (1628–80). Commonly styled Colonel Blood. A most celebrated adventurer, he tried unsuccessfully to steal the Crown Jewels from the Tower in 1671.

Bloodhounds. Wise dogs with marvellous powers of scent.
Pictures: 1, 88

Bloody Assize, The. The name given to the trials conducted by the notoriously cruel Judge Jeffreys after the collapse of the Monmouth Rebellion (1685), 2, 172, 408

Blowpipe. Name given to an appliance burning a mixture of oxygen and acetylene gas. Its flame will cut through steel plates, 5, 94
Picture: 5, 94

Blubber. The layer of fat which forms underneath the skin of the whale, 1, 111

Blücher, Gebhard von (1742–1819). Great Prussian Field-Marshal and cavalry leader. He turned the defeat of the French at Waterloo into complete rout, 2, 207, 410
Colour Plate: Meeting of Wellington and Blucher, 2, *facing* 208

Blue African Lily is the name often given to the plant Agapanthus

Bluebell. A bulbous plant. There are blue, white and pink varieties. Grows profusely in many woods. The garden variety is listed as *Scilla nutans*, 8, 280
Colour Plate. 1, *between* 304 and 305 (Plate 4)

Blue Book. Term used for publications issued with the authority of the British Parliament dealing with matters concerning aspects of Government affairs, including Consular Reports or reports made by Royal Commissions appointed by Parliament.
At one time Foreign Office papers were known as White Papers but is now used for other Government reports. Blue Books are bound in blue paper wrappers; White Papers are issued without wrapper or cover. The sale to the public of these Government publications began in 1836.

Bluebottle. Name given to a large cousin of the house-fly. Also known as the blowfly, 1, 240

Blue Boy, The. A famous picture by Thomas Gainsborough. It was painted to refute an opinion expressed by Sir Joshua Reynolds, 7, 79
Picture: 7, 78

Blue Cap. Name given to the fungus *Heterophylla* (*q.v.*).

Blue Fox. Name given to the Arctic fox during the summer months when its coat is of a bluish shade.

Blue Gum. See *Eucalyptus.*

Blue Mosque is a famous building in Baghdad.
Picture: 4, 201

Blue Mosque. See *Mosque of Sultan Ahmed I.*

Blue Mountains. These beautiful mountains are in the British island of Jamaica in the West Indies. Their height is double that of Snowdon, 3, 397

Blue Mountains is the name of a range in New South Wales, Australia. It has an average height of 3,000 feet and is part of the Dividing Range which runs along the eastern coast of the continent. It is so named from the wonderful haze which covers these highlands, 3, 204
Picture: 3, 241

Blue Mountains are highlands lying to the west of the District of Columbia in the U.S.A., 4, 268

Blue Mountain Peak, in Jamaica, is 7,355 ft. in height

Blue Nile is the name of one of the main tributaries to the River Nile, 4, 195, 197; 5, 82

Blue Peter. A blue flag with a white square in the centre, hoisted when a ship is about to put to sea, 9, 398

Blue Print, a plan having white lines on a blue ground and produced by a system of photography, is in general use among engineers, 5, 150

Blue Riband of the Atlantic. A mythical award to the vessel completing a crossing of the ocean in record time. It is now held by the American liner *United States*, 5, 257; 8, 63

Blue Tit. A winter bird visitor to most gardens, about 4½ in. in length, with brilliant blue plumage. See *Titmouse.*
Colour plate: 1, *between* 160 and 161 (Plate 2)

Blundell's School for boys is at Tiverton, Devon. It dates from 1604.

Blunden, Edmund Charles (born 1896) Well-known modern English poet, he wrote a life of Leigh Hunt, and was the author of *The Undertones of War.* He was professor of English Literature at Tokyo 1926–27, 7, 156

Blyth is a seaport of Northumberland from which coal is shipped, 3, 81

B.M.A. means British Medical Association.

B.Mus. means Bachelor of Music.

Boa Constrictor. A large snake which kills its prey by great pressure with the constriction of its coils, 1, 141
– Bates the naturalist met a boa constrictor,
Pictures: The Green Tree Boa, 1, 141
Boa Constrictor, 1, 143

Boadicea. A British chieftainess who ruled in East Anglia and defied the Roman invaders, 2, 80, 403
Picture: 10, 43

Boar is the name we give to the male pig, **6**, 381

Boar Fish. A creature of the same family as the dory. It is a small pink fish and is found in British waters.

Boat Race, The, between Oxford and Cambridge is held each year over a course of four and a quarter miles on the Thames. It has been rowed almost continuously since 1856, **2**, 222, **9**, 402

Boats and Boat Building. How to Make a Model Sailing Boat; a Model Racing Yacht; and a Model Submarine, **8**, 356. With *Diagrams.*
Pictures: Model Boats on a London Pond, **8**, 356
Elastic-driven Model Submarine, **8**, 360

Bobac. Name of a marmot found in parts of Russia and Poland. Its body is about 15 in. in length. These animals live in burrows.

Bobbies. The names "Bobbies" and "Peelers" were applied by Londoners to the Metropolitan Police after that Force had been founded by Sir Robert Peel in 1829. The name "Bobbies" was later used in the country generally. See *How the Police Work*, **9**, 75 *et seq.*
Picture. **9**, 77

Bobolink is the name of a small bird of Central and North America.

Bobtail the Rabbit. The story of this interesting animal, **1**, 136

Bode, Johann Elert (1747–1826). A famous German astronomer. He discovered asteroids and his name is best remembered for his formula called "Bode's Law," **8**, 145

Bodiam Castle, in Sussex, is one of the finest examples we have left in England of a moated fortress, **3**, 410
Photo-tone Supplement. The Castle of Proud Barons, **2**, *between* 128 and 129

Bodkins do not have pointed ends and are made with wide eyes. They are mostly used for threading ribbons.

Bodleian Library is the official library of Oxford University. It owes its name to Sir Thomas Bodley (1545–1613) an English scholar and diplomat, who devoted the last years of his life to the task of restoring the library of Duke Humphrey at Oxford which had been destroyed by fire in the reign of Edward VI.
A new building to house the great collection of over a million books was opened by King George VI in October 1946, **3**, 28

Bodmin is the county town of Cornwall and the centre of a large agricultural district, **3**, 46

Bodmin Moor. A tract of high moorland to the north-east of Bodmin, Cornwall. It contains the highest hill in the county, Brown Willy, 1,375 ft., **3**, 44

Body, Human. See *Physiology.*

Boehm, Sir Joseph Edgar (1834-90). A Hungarian by birth, he settled in England and became a noted sculptor. The colossal statue of Queen Victoria at Windsor is his work.

Boeing Flying Boats are among the aircraft used on British Overseas Airways routes.
Pictures: Bristol Flying Boat, **5**, 201

Boer. The name given to Dutch farmers of South Africa and especially to the Dutch population of the Transvaal and Orange Free State, **2**, 220; **3**, 276 *et seq.*

Boer War. See *South African War.*

Bog Asphodel. Name of a wild plant that grows in wet places. It reaches a height of about 1 ft. and produces star-like yellow flowers.

Bogie. A pivoted wheeled truck used at one end or both ends of a railway locomotive or carriage. Locomotive bogies usually have four wheels, but in some cases only two; while carriage bogies may have four or six wheels. The bogie is so attached that it can adjust itself at a curve.

Bognor Regis. Popular holiday centre on the Sussex coast. Here King George V was restored to health after a severe illness, **3**, 36

Bog Oak is a very hard, black wood found in the bogs of Eire. It is used for carving.

Bog of Allen. This is the largest of the bogs of Ireland occupying nearly a quarter of a million acres. It is found in the centre of the country, **3**, 142

Bogota is the capital of the South American Republic of Colombia. It stands on a plateau over 8,000 ft. above sea level, **4**, 330

Bohemia is the name of an old Czecho-Slovak province in which the chief town was Prague. Along with Moravia and Silesia, this province was abolished in 1948, its area being redivided into administrative "regions," **4**, 90
how the metal nickel was discovered here, **6**, 111

Bohemian Diamond is a plateau of Czechoslovakia where the River Elbe, the second great river of Germany, has its source, **4**, 84

Bohol is the name of an island in the Philippine group.

Boier is the name given to a type of barge used on the canals of Holland, **4**, 30

Boiling Pot is the name of a chasm of the Victoria Falls on the Zambezi River, **3**, 296

Bois de Boulogne is a famous park on the western side of Paris, **4**, 12

Boise is the capital of Idaho, one of the Western States of the U.S.A.

Bokhara is a district of the Uzbek republic of the Soviet Union. This republic is a dry region, but irrigation makes intensive farming possible and Uzbekistan is the main cotton growing area of the U.S.S.R. The chief town of the Bokhara district is also called Bokhara. It has a long history as a business centre of Central Asia, **4**, 112

Boladeros is the name of a contrivance used by hunters in South America. Boladeros consist of weighted thongs, knotted together, which are whirled above the head and thrown to bind themselves round the pursued animal, **4**, 336

Bolan is the name of a famous pass and river in Baluchistan, **3**, 340

Bolax. A rockery plant that grows into a cushion 8 ft. to 10 ft. across, **1**, 363

Boldrewood, Rolf (1826–1915). Pen-name of Alexander Brown, the Australian novelist. His most famous story was *Robbery under Arms.*

Boleyn, Anne (1507–36). Second wife of King Henry VIII who had her executed on Tower Green, London, **2**, 142, 406

Bolivar, Simon (1783–1830). A Venezuelan, he was constantly fighting the Spaniards. In the end he became victorious and the State of Bolivia was named in his honour.

Bolivia is a republic of South America. Much of its area has not been developed, but it has important rubber and timber interests. Its most important industry is mining. The population is over 3½ millions. La Paz is the seat of government and Sucre the nominal capital, **4**, 326, 394
Pictures. Views of La Paz, **4**, 332

Boll is the name given to the seed capsule or fruit of the cotton plant. From the boll comes the raw cotton, **6**, 336
Picture: **6**, 337

Boll-Worm and Boll-Weevil. Two of the chief enemies of the cotton-grower in America, **6**, 337

Bologna is an ancient town of Italy, capital of a district of the same name.

Bolsa is a word used in Brazil to denote an Exchange, *e.g.*, the Coffee Exchange at Santos.
Picture. **4**, 321

Bolsover is a town of Derbyshire, centre of a colliery district and limestone district. Bolsover Castle dates from the eleventh century.

Bolting. A gardening term. It is used when a plant, *i.e.*, lettuce, parsley, cabbage, etc., puts up a seed stem or goes to seed.

Bolton, Lancashire, is a great centre of the cotton industry, but has other important interests as well, **3**, 86

Boma is a town and port on the River Congo in the Belgian Congo, of which it was once the capital.

Bombard means to attack with heavy artillery fire. A bombard was a very early form of cannon or mortar used for hurling stone balls.

Bombay is a province of the Dominion of India and is a centre of the cotton industry, **3**, 323
Bombay, the capital, is the gateway to the whole of India and the second port of the country. It has many manufactures and notable buildings.
Pictures: In a Bombay Cotton Mill, **3**, 314
The Municipal Building, Bombay, **3**, 315
Bombay as an Airman sees It, **3**, 323

Bombyx mori is the name of the mulberry-feeding moth from whose eggs the silkworm is hatched, **6**, 346
See *Silkworm.*

Bonaparte, Napoleon. See *Napoleon Bonaparte.*

Bonavista, a town and seaport of Newfoundland, was one of the early settlements in the Colony.

Bonded Warehouses are provided for the storage of dutiable goods, such as tea, tobacco, wines and spirits, until the duty upon them has been paid, **8**, 96

Bondi is a famous bathing-beach of Sydney, Australia, 3, 231
Picture: 3, 233
Bone forms the framework of our bodies and is nearly twice as strong as oak. The material of which bone is made is called "bone tissue." Each of us has over 200 separate bones, 8, 209, 211
Bone-Beds. Discovered in many parts of Europe, such beds contain the bones of many small animals and those of fish, 1, 6
Bone, Sir Muirhead (1876–1953). Scottish artist famous for landscapes, seascapes, interiors and buildings, 7, 110
Picture: 7, 115
Bonemeal. Bones from which the fats have been extracted ground into a mealy material for use as garden fertiliser, 8, 272
Bone Pit. Hole in the ground where the remains of the larger prehistoric animals are found.
Bones, Fossil. See *Fossil Bones.*
Bo'ness is a busy port of West Lothian, Scotland, on the Firth of Forth.
Bonheur, Rosalie Marie (1822–99). A great French artist famous as a painter of animals.
Bonn is a seat of learning and town of Germany on the River Rhine and was chosen in 1949 as the headquarters of the German administration of the western zones of Germany, 4, 70
—the birthplace of Beethoven, 7, 166
Bonnet-Piece. A Scottish coin, so-called because the King wears a bonnet instead of a crown.
Picture: 8, 304
Bonneville Dam is on the Columbia river of the U.S.A., 4, 293
Bonnie Prince Charlie. Son of James, the Old Pretender. See *Prince Charles Edward.*
Boo-Boo and his Tail. A Story for Nursery Folk, 5, 297
Book—How this Book was Built. This is a *Photo-tone Supplement* in vol. 6, between pp. 176 and 177, describing and illustrating various processes in printing and binding the ten volumes of *Pictorial Knowledge.*
Booking Office. So-called because in the days of stage coaches passengers' names were entered in a book, 9, 361
Book Plates are printed or stencilled slips pasted on the flyleaf of a book to denote ownership. The collecting of book plates is an interesting hobby.
Books for Boys and Girls. This section surveys the whole field of books written for young readers and gives lists of adventure stories, school stories, poetry, historical, humorous, and animal stories; mystery tales; nature stories; nursery rhymes, fairy stories, and books for the very young, 7, 267 *et seq.*
Pictures: The Golden Key to the Land of Enchantment, 7, 267
Library at the High School, Richmond, 7, 268
Tom Brown's Great Fight, 7, 269
Rip Van Winkle, 7, 270
In the Enchanted Castle, 7, 271
Where Beatrix Potter Lived, 7, 272
Scene from "the White Company," 7, 273
The Count of Monte Cristo's Pardon, 7, 275
Just William, 7, 276
Mrs. Taper knocked their heads together, 7, 277
Girls and Boys come out to Play, 7, 278
Bookworm is the name given to a person who spends a great deal of time reading books for the mere pleasure of reading.
Boomerangs are included among the weapons of Australian natives. They are about 2 ft. 6 in. in length and some are so shaped that they return to the thrower if they miss their mark. An expert can throw up to 200 yards, 3, 226
Boon is the name given to the stalks or straw of the flax plant, 3, 147
Boone, Daniel (1734–1820). A famous American pioneer who had many adventures with the Red Indians.
Bootes (or The Herdsman) is the name given to a group or constellation of stars.
Booth, William (1829–1912). A Methodist preacher, he broke away and in 1878 founded the Salvation Army.
Boothby, Guy Newell (1867–1905). Born in Australia, he came to England and was soon a successful novelist. *Dr. Nikola* was his most famous character.
Boothman, J., Flight-Lieut., won the Schneider Trophy in 1931 by flying at 340 miles an hour, 5, 206
Bootle is a manufacturing and residential town of Lancashire, adjacent to Liverpool.
Borage is a wild plant growing to a height of 1 ft. or more. It is covered with hairy growths and the flowers change to bright blue as they mature. The plant is also cultivated for its flavouring properties.
—as a pest in Brazil, 1, 338
Borchgrevinck, C. E., a Norwegian explorer, he led the Southern Cross Antarctic Expedition in 1898, 2, 368
Bordeaux, standing on the River Garonne, is a large town and port of France in one of the famous wine regions of the country, 4, 13 and 14
Picture: 4, 15
Border Forays is the name given to the frequent raids and fighting in olden days on the boundaries of England and Scotland, 3, 110
Borders, The, is the name usually given to the district where the countries of England and Scotland meet. The actual boundary runs from Solway Firth and along the crest of the Cheviots to Berwick-on-Tweed, 3, 109
Bordighera is a town of the Italian Riviera and a noted health resort.
Bore. The phenomenon when a strong tide flows up a river in the form of a wave, 5, 28
Pictures: The Haining Bore in China, 5, 29
The Severn Bore, 5, 31
Evening Tide at Gainsborough, 5, 33
Like a Corrugated Sheet, 5, 34
See also *Tides.*
Bore Stone, upon which Robert Bruce planted his standard, may be seen on the field of Bannockburn.
Picture: 3, 110
Borglum, Gutzon. A sculptor who has carved some remarkable effigies of American national heroes on the rock face of the Black Hills in the Mount Rushmere National Park, U.S.A.
Picture: 4, 282
Photo-tone Supplement: Famed in America's Story, 4, *between* 272 and 273
Boris Godunov, Tsar of Russia, ruled from 1598 until 1605. There was civil war and popular uprisings, and in 1613 a Romanoff was elected Tsar, 2, 407
Borneo. A large island in the Malayan Archipelago. Its western and southern parts, forming some two-thirds of the island, are the concern of the Dutch. The remainder is British and consists of Sarawak, Brunei, and North Borneo, all of which are dealt with separately in this index. See *Indonesia* for Dutch Borneo, 3, 404
—its dense forest land, 1, 321
—the story of the White Rajah of Sarawak, 2, 325 *et seq.*
Borodin (1833–87). Notable Russian musical composer, 7, 187
Borodino, Battle of (1812) was fought some hundred miles west of Moscow. After winning the battle, the French under Napoleon entered Moscow, 2, 205
Borough is the name of a London market noted for fruit. It is situated at the south end of London Bridge, 3, 62
Borough Council, or City Council or Corporation. A body of men and women elected by the voters in each borough to carry out certain duties of local government laid down by Parliament, relating to public health, housing, education, roads, sewerage and other matters. The largest cities are termed "County Boroughs," 9, 66
Boroughs, Metropolitan. The 28 Metropolitan Borough Councils were established by the London Government Act of 1899. They took over the work of "vestries" and district boards which at that time carried out public services in the various districts of the County of London. The borough councils are concerned with matters relating to public health, housing, the smaller public open spaces, the construction, cleansing, and maintenance of streets, and local sanitary matters generally. They also maintain public libraries and baths, 9, 66
Borrow, George Henry (1803–81). Born in Norfolk, he knew twelve different languages when eighteen. Wandered through England, Russia, Spain and other countries. Wrote *Lavengro, Romany Rye, The Bible in Spain* and *Wild Wales,* 2, 348; 3, 102
Pictures: A Salesman of the Scriptures, 2, 348
Caught in a Thunderstorm, 2, 349
Two Well-known Assassins, 2, 351
Rescued from Prison, 2, 352
Borrow, Captain Thomas, was the father of George Borrow, the famous English author, 2, 348
Boru is the name of a large island in

BLACKPOOL'S FAMOUS TOWER



Valentine, Dundee

As Lancashire developed its great industries, so the little fishing village of *Blackpool* (see p 42) grew into one of Britain's biggest—and brightest—holiday resorts. The annual Wakes weeks, when whole towns closed down for a brief respite from the mill and factory, brought thousands of holiday-makers to health-giving Blackpool. Our photograph shows the 520 ft high Tower and Central Beach of this far famed resort

the Dutch East Indies. It is one of the Molucca group.

Boru, Brian, or Brian Boroimhe (*c.* 926–1014). Became King of Munster, 976, and after a career of conquest became ruler of Ireland. Successful in many battles against the Danes, he was slain at the battle of Clontarf.

Borzoi. A very handsome dog, often known as the Russian wolfhound. It was first introduced into England in 1842 and has been widely known since 1890.
Picture: **1,** 88

Boscobel Manor House, near Shifnal, in Shropshire, is famed by reason of the fact that it was in an oak tree near by that Charles II concealed himself after the battle of Worcester.

Bosnia is a district which, with Herzegovina, forms one of the Federative units of Yugoslavia. Sarajevo is its chief town, **2,** 233

Bosphorus is the name given to a strait which connects the Sea of Marmora with the Black Sea, **4,** 158

Boston. (1) A town of Lincolnshire, on the River Witham, famous for the tower of its St. Botolph Church known as the "Boston Stump" and a considerable landmark. Puritans sailed from Boston (1620), **2,** 158
(2) Name of the capital of Massachusetts, U.S.A. A great port and railway centre, it has many industries. It forms a winter sea-gate to Canada, **2,** 191; **3,** 161
—the Boston Tea Party, **2,** 193
Picture: **2,** 192

Boston Tea Party, The. Name given to a group of English settlers who, disguised as Indians, threw into the harbour at Boston cargoes of tea. This was a protest at what were considered to be unjust taxes, **2,** 193
Picture: **2,** 192

Bosun's Chair. A seat swinging on ropes. It is used for the support of men whilst painting ships' sides, funnels, etc.
Pictures: **5,** 256; **6,** 187

Boswell, James (1740–95). Son of Lord Auckinleck and a friend of the great Dr. Johnson, of whom he wrote the famous biography.

Bosworth, Battle of (1485). The forces of Henry Tudor, Earl of Richmond, defeated those of King Richard III. Afterwards Henry was crowned as King Henry VII. Bosworth itself is a small town in Leicestershire, due west of Leicester, **2,** 136, 406
Picture: **2,** 139

Botafogo Bay is the beautiful bay upon whose shores stands Rio de Janeiro, capital of Brazil. Darwin, the famous naturalist, had a cottage here for a time, **2,** 344
Picture: **4,** 312

Botanical means something relating to the study of plants. In botanical gardens, such as those at Kew and in Regent's Park, living trees and plants from all over the world are brought together so that they may be studied. See *Botany.*

Botany is the study of plants, their structure, their relation to other plants of similar growth, and their distribution throughout the world, as well as the way in which all these different kinds of plants grow and produce their seeds to bring forth similar plants.
Botany was studied by the ancient Greeks, who used plants as medicines. Others in later centuries began to classify plants and arrange them systematically. It was Carl Linne or Linnaeus (1707–78) who founded the modern system of plant classification, and he has been followed by many others, including Charles Darwin, the famous naturalist.
The study of Horticulture, Agriculture, and Forestry are all branches of botany in its broad sense. See *The Wonders of Plant Life in Forest, Field and Garden,* **1,** 275 *et seq.* Also the various plants, flowers and trees indexed under their separate headings.
Pictures: **10,** 51

Botany Bay is a suburb of Sydney, New South Wales, which was once a landing place for convicts. It was visited by Captain Cook, **2,** 311, 312

Botha, Louis (1862–1919). South African statesman and Boer general. He was the son of a Voortrekker. He represented the Boers at the peace negotiations of 1920 and later worked to create friendly understanding between Britain and the Boers. He brought South Africa into the Great War (1914–18) as Britain's ally, **2,** 225; **3,** 280

Bothwell is a town of Lanarkshire, Scotland. It has iron and steel works and collieries.

Bothwell, James (Earl of) (1536–78) Associated with Mary, Queen of Scots, whom he married after the death of Darnley, **2,** 152

Bo-Tree is the name of a tree growing in India and Ceylon. It is held to be sacred, **3,** 368

Botticelli, Sandro (1444–1510). Apprenticed to the great artist Fra Filippo Lippi, he became even greater than his master, **7,** 6
Picture: The Magnificat, **7,** 7

Bottle Brush is a scarlet flower found in the Australian bush, **3,** 248

Bottlenose. Name sometimes given to the *Puffin (q.v.).*

Bottle Tree is found in Australia. In the summer it stores a considerable quantity of water in its bulging trunk, **3,** 248
Picture: **3,** 247

Botwood, Newfoundland, is an airport on the trans-Atlantic route from Britain to Montreal, **3,** 161

Boucher, Francois (1703–70). A great French painter, he invented the beautiful colour called Rose du Barry, **7,** 66
Picture: **7,** 66

Bougainville is one of the Solomon Islands, in the Pacific.

Bougainvillea. A climbing plant found in warm lands. It ranges in colour from scarlet to purple, **3,** 228

Boughton, George Henry (1833–1905). Well-known British artist, he excelled in painting peasant types.
Pictures: The Meeting of Milton and Marvell, **7,** 136
On the Road to Camelot, **7,** 146

Bouillon. A broth made of chicken, veal or beef.

Boulder is the name of one of the towns of the Western Australia goldfields. The population numbers nearly 6,500.
Picture: **3,** 205

Boulder Dam is in Nevada, U.S.A., and is on the Colorado river which forms the boundary between that state and Arizona. The dam provides water for irrigation and for hydro-electric power, **4,** 202
Photo-tone Supplement. United States of America, **4,** *between* 272 and 273

Boulogne-sur-Mer is a town of Northern France, one of the cross-channel ferry ports served by steamers to and from Folkestone.
It was here that Napoleon had his invasion camp (1803), **2,** 198

Boulton, Matthew (1728–1809) An engineer who became partner with the great James Watt at their works at Birmingham.
Picture By Beam and Wheel in 1788, **5,** 119

Boundary Riders are employed on Australian sheep stations. Their job is to keep the fences in order, **3,** 214

Bounty. This was the name of the ship, commanded by Lieutenant Bligh, whose crew mutinied in 1789. Eight of the mutineers went to Pitcairn Island, in the Pacific Ocean, and thus was the beginning of the British colony there, **2,** 410, **3,** 391

Bourbon. A French family which, for some considerable period, provided occupants for the thrones of France, Naples, and Spain, **4,** 150

Bouree, Jean, was a minister of King Louis XI of France. He built the lovely castle of Langeais in the Loire country.
Picture **4,** 13

Bourget, Le, is a small town in the neighbourhood of Paris. It gives its name to the airport used for important aeroplane services

Bournemouth, Hampshire. One of the largest and most popular holiday resorts, it is near the New Forest and has a vast stretch of sand. It has double tides, like Southampton, and is noted for its pine trees, **3,** 38

Bournville. An important chocolate manufacturing centre at Birmingham, **4,** 384

Bovey Tracey is a small town of South Devon interested in pottery.

Bovington. A village in Dorset. Cloud's Cottage in the village was the home of T. E. Lawrence, better known to us as Lawrence of Arabia, **3,** 413

Bowen Falls are a lovely cataract of the Milford Sound district of South Island, New Zealand. They fall from a height of 540 ft. into the Sound.
Photo-tone Supplement. Capital of a Dominion, **3,** *between* 256 and 257

Bower Bird. A bird of Australia which fills its nest or "bower" with brightly-coloured things, **3,** 246
Picture: The Satin Bower-bird, **3,** 247

Bowers, Lieut. R. H., was with Captain Scott in the Antarctic, **2,** 375

Bowes-Lyon is the family name of the Queen Mother. Before her marriage she was the Lady Elizabeth Bowes-Lyon, **2,** 244

Bowfell is a peak in the Scafell group of mountains. It is 2,960 ft. in height, **3,** 90

Bowls. Next to Archery is the oldest-

established of British outdoor games It is played on flat or crown greens with bowls of lignum vitae, each of which is loaded, or biased, on one side and the object is to play the bowl as near as possible to the small bowl known as the jack

Bowness is a town and holiday centre of Westmorland It stands at the head of Lake Windermere

Bow River Valley is in the district of Canmore, Alberta, Canada It is noted for its exquisite scenery
Picture **3**, 193
Photo-tone Supplement The Dominion of Canada, **3**, *between* 160 and 161

Bow Street Runners. These were the officers of the "Bow St Police Force" founded by Henry Fielding (magistrate and novelist) in 1749 They were charged not only to keep law and order, but to befriend the poor and unfortunate, **9**, 76

Box. Name of a small-leaved shrub which may reach the size of a tree in congenial surroundings, such as at Box Hill (Surrey) Box-wood was once much used by engravers

Box Hill. A Surrey beauty spot near Dorking The hill is 590 ft high
Picture On the North Downs, **3**, 414

Boxing is the modern method of fighting with the fists Jack Broughton (1705 89) English champion prize fighter with the bare fists is believed to have invented boxing-gloves and the sport became popular The Queensberry Rules were drawn up in 1866 and the general principles still govern the sport. The standard championship weights are Fly-weight, 8 st , Bantam weight, 8 st 6 lbs , Feather weight, 9 st , Light-weight, 9 st 9 lbs , Welter-weight, 10 st 7 lbs , Middle-weight, 11 st 6 lbs , Light heavy-weight (Cruiser weight), 12 st 7 lbs , Heavy weight, any weight The gloves usually weigh from 4 *oz* to 6 *oz* in proper contests

Boxing Day is so called because on the day after Christmas alms boxes were set up in public places, **9**, 301

Boxing the Compass means to name the thirty-two points in order, beginning at N See *Compass*

Box Kite and how to make it, **8**, 363 With *Diagrams*

Boycott, Charles Cunningham (1832 97) As agent of estates in Ireland he came in conflict with the people His men refused to work for him and shop-keepers to supply him with necessaries Thus arose what is called "boycotting"

Boyle, Robert (1627 91) Seventh son of the Earl of Cork, he was born at Lismore He took up the study of drugs and his name is perpetuated in the law of gases which he formulated, **7**, 356
Pictures **7**, 360, 361

Boyne is the name of a river of Eire, famous in history It empties into the Irish Sea

Boyne, Battle of the (1690) The forces of William III defeated those of King James II at this battle in southern Ireland after which James fled to France, **2**, 173

Boy Scouts Association. Founded by Lord Baden-Powell in 1908, this great youth organisation has now more than five million members in forty-nine different countries of the world The Chief Scout is Lord Rowallan, M C (*q v*) The highest Proficiency Badge to be gained by Boy Scouts is the Queen's Scouts Badge, **2**, 226
See also *Scouts, Boy*
Picture Queen's Scouts at Windsor, **10**, **55**

Boy, The Naughty. A Poem by John Keats, **9**, 92

Boy Through the Ages, The A series of pictures showing an ordinary boy of his times at different periods in English history, from the days of the Roman occupation of Britain to the nineteenth century when the steam locomotive and railways first came into existence
Photo-tone Supplement **8**, *between* 368 and 369

Brabant is a province of Belgium The word is often used to describe the powerful breed of carthorse which is found in Belgium, **4**, 23

Brabazon of Tara, Lord (b 1884) As Lt Col Moore Brabazon, he was a pioneer in aviation and the first man to fly in England, becoming holder of No 1 Royal Aero Club pilot's certificate, **5**, 195
Pictures An Early Voisin Aeroplane, **5**, 197
Brabazon I Air liner, **5**, 232

Bracelet. An ornamental band to be worn on the wrist Bracelets were in use in ancient Egypt

Brachiosaurus A prehistoric animal one of the Dinosaurs, or "terrible lizards"
Colour Plate **1**, *facing* 36

Bracken Name of a common fern the roots of which spread underground and thus throw up new fronds When dried it makes bedding for cattle If not checked it spreads over moors and destroys heather
Picture **1**, 336

Bracknell is a town in Berkshire Wellington College, Sandhurst and Windsor Forest are near by

Bract A small leaf growing at the bottom of a flower stalk

Braddon, Mary Elizabeth (1837 1915) One of the most popular of Victorian women novelists Author of *Lady Audley's Secret*

Bradford is a city of the West Riding of Yorkshire, the second of the great woollen centres, **3**, 83

Bradford-on-Avon, a small town of Wiltshire, has the best example remaining of a Saxon church, **7**, 296

Bradley, James (1693 1762) He obtained from observation at the mast-head of a sailing boat a clue which led to the discovery of the nutation or nodding of the earth's axis Succeeded Halley as Astronomer Royal

Bradshaw, George (1801 53) A map engraver, he was the first to draw up Railway Time Tables, which ever since have borne his name, in 1841

Bradshaw, John (1602 59) An English judge he was chosen as president of the court that tried Charles I after the Civil War and pronounced sentence upon him. He was buried in Westminster Abbey but later removed and buried at Tyburn in the reign of Charles II, **3**, 411

Brae is the word used in Scotland to describe rising ground above the bank of a river Burns wrote of "banks and braes"

Braemar is a small town of Aberdeenshire noted as a health resort Here Highland Gatherings are held where the standard of the Old Pretender was raised (1715), **2**, 180
Pictures King Edward VII watches the Games, **2**, 226
A Highland Gathering, **3**, 130
Throwing the Hammer, **3**, 132
Throwing the Stone, **3**, 133
A Piping Competition **3**, 137

Bragg, Sir Lawrence (born 1890) Son of Sir William Bragg, he is one of our foremost scientists, **7**, 375

Bragg, Sir William Henry (1862 1942) Born at Wigton, Cumberland With his son, Professor Sir Lawrence Bragg, linked together the chief facts and principles relating to X-rays and to crystals Mapped out the position of atoms and did much to popularise science, **7**, 378

Brahe, Tycho (1546 1601), a Swedish astronomer of great distinction In the island of Hveen, presented to him by King Frederick II, with Kepler and other of his assistants, he drew up a catalogue of fixed stars, **4**, 47 **7**, 349, **8**, 174
Picture Tycho Brahe's Observatory, **7**, 350

Brahmaputra is the name of one of the great rivers of India It rises in the Himalayas and flows through Assam and thence into Bengal where it joins the Ganges, **3**, 348
Picture **3**, 357

Brahmin Bull See *Zebu*

Brahmins form a caste of Hindus They are descended from the priests, **3**, 315, 319

Brahms, Johannes (1833 97) A famous German musical composer, born at Hamburg, **7**, 182
Picture **7**, 174

Braila is a Rumanian grain and timber port on the River Danube **4**, 104

Brain The brain can be regarded as the headquarters of the government of the body It is the seat of all the higher functions The methods by which the brain and the mind work are described in *How the Brain and the Mind Work*, **6**, 399 *et seq*
Pictures and diagrams Training Youth for Modern Industry **6**, 399
Students at Work, **6**, 401
An Optical Illusion, **6**, 402
Messages to the Brain, **6**, 403
Messages along the Neurons **6**, 404
A Simple Comparison, **6**, 405
Protector of the Brain, **6**, 406
A Side View of the Brain, **6**, 406
Brains of Different Animals, **6**, 407
The Folds of the Brain, **6**, 408
Nerves and Fibres, **6**, 409
A Map of the Brain, **6**, 409
Seen in Different Ways, **6**, 410, 411
Relationship between Different Objects, **6**, 413
The Unconscious Mind, **6**, 415
Another Optical Illusion, **6**, 416

Braintree is a market and manufacturing town of Essex

Braithwaite, John (1797–1870) A versatile inventor, he equipped the

House of Lords with air pumps; designed a donkey engine; constructed the first practical steam engine and worked on locomotives with the Stephensons.

Brake. Another name for *Bracken* (*q.v.*).

Bramah, Joseph (1748–1814). A notable inventor, he took out a patent for the famous lock that bears his name and designed a machine for printing and numbering banknotes.

Bramble. Name sometimes used for the blackberry bush. See *Blackberry*.

Brambling. A bird of the chaffinch type which visits Great Britain during the winter months.

Bramley, Frank (1857–1915). Well-known British artist, he was associated with the New English Art Club, 7, 111

Brancker, Sir Sefton (1877–1930). He was a great leader in British civil flying. He was killed in the *R*-101 disaster, Oct. 5, 1930, 5, 203

Brand. A mark made with a hot iron or otherwise to indicate ownership or quality. On cattle and horse ranches the animals are branded for the first reason. Goods are branded with a mark or name and so we speak of this or that brand of tobacco, butter, soap, etc.

Brandon Hill at Bristol is the site of the Cabot Tower from the top of which a fine view of the city can be obtained. *Picture:* 3, 29

Brangwyn, Sir Frank (born 1867) This famous British artist is of Welsh descent. His early paintings are all of the sea, 7, 104
Photo-tone Supplement. Departure of Lancaster for the East Indies, 7, *between* 112 and 113

Brant, Isabella. The first wife of Paul Rubens, the great artist, 7, 39
Picture: 7, 41

Brantford. City and port on the Grand River, Ontario, Canada. Alexander Graham Bell, inventor of the telephone, carried out some of his early experiments here and prepared the patent specification. A monument to Bell's memory was unveiled here in 1917, 9, 307

Brass is an alloy of copper and zinc, 6, 112, 121

Brathay is the name of a river of the English Lake District. It enters Lake Windermere.

Bratislava, once known as Pressburg, is a town of Czechoslovakia standing on the River Danube. It is a river port and was once the capital of Hungary, 4, 91
Picture: 4, 93

Brattice. A partition used in mines to direct the course of ventilating air. It is made of thin boards or cloth stretched on wooden frames, 6, 12

Bray. (1) A small town of Berkshire, standing on the River Thames. Here lived the famous "Vicar of Bray." (2) A seaside town of Wicklow, Eire, now known as Bri Chaulann.

Brazil, United States of. A vast republic of South America, it has an area of more than three million square miles. It is larger than Australia and is the fourth largest country in the world. The Amazon is its principal river and its capital is Rio de Janeiro. The republic consists of 20 states, a federal territory and a federal district. Coffee, castor beans, cocoa, sugar and tobacco are the chief crops. Rubber is also an important product and there is mineral wealth. The population numbered more than 41 million at the 1940 census, 2, 281, 339; 4, 311 *et seq.*, 390
Pictures: The Presidential Palace, Rio de Janeiro, 4, 311
Ascending the Sugar Loaf, 4, 312
The Praça Paris, 4, 313
Sao Paulo, 4, 313
By the "River of January," 4, 314
Snapshots from Rio de Janeiro, 4, 315
Building a Pavement, 4, 316
A Typical Brazil Coffee Estate, 4, 317
The Source of the Amazon, 4, 318 and 319.
Bahia's Lower Town, 4, 320
In the Coffee Exchange, Santos, 4, 321
Working in Butterflies, 4, 322
Colour Plate: In the Capital of Brazil, Rio de Janeiro, 4, *facing* 301

Bread is the principal food of most nations and consists of flour mixed with water, yeast and salt, kneaded into dough, made into loaves and baked. Wheat flour is used mostly in temperate zones while rye, oats and barley are employed in more northerly latitudes. Millet and maize are also used.
Yeast was first used in England in 1634. Cakes of barley bread have been found in Stone Age dwellings and cakes of fine flour are mentioned in the Old Testament. Bread was made by the ancient Egyptians and the Romans established free baking houses for bread.
On an average the daily consumption of bread in Britain is from 8 to 10 ounces per head.

Breadalbane is a district of Scotland, in Perthshire. It contains several of the Grampian peaks as well as lochs.

Breadfruit. The fruit of the breadfruit tree which grows extensively in the islands of the south-west Pacific. Roasted, the fruit tastes not unlike newly-baked bread, 3, 391

Breakfast Rock, in Natal, is the starting point for an ascent of the Drakensberg Mountains, 3, 304

Bream. Fresh-water fish of which two species are common in British waters. Being free and rather bold feeders they are popular with anglers, though they are of little value as table fish.
Special Colour Supplement: British Fresh Water Fishes, 8, *between* 256 *and* 257

Brecknockshire. See *Brecon.*

Brecon. One of the counties of South Wales. Much of its surface is mountainous, but farming is carried on there and there is coal and other mineral wealth. The county town is Brecon, 3, 94

Breda is a town of the Province of North Brabant, in Holland, 7, 56
Picture: 7, 56

Bremen, on the River Weser, is one of the principal ports of Germany. It has ship-building yards and many other industries, 4, 73, 84

Brennan, Louis (1852–1932). Became interested in the gyroscope and invented first a torpedo and then a monorail car.

Brenner. One of the major passes over the Alps, it carries the road from the Austrian town of Innsbruck into the Trentino region of Italy.

Brennus. Leader of the Gauls who, in 391 B.C. attacked Rome and defeated the Roman army.

Brentford, Middlesex, was long ago capital of the Kingdom of the Middle Saxons. Two famous battles were fought here, but the town is now largely industrial and residential. It stands on the north bank of the Thames.

Brentwood is a market town and commercial centre of Essex.

Brer Rabbit and the Tar Baby. A Tale of Brer Rabbit, 5, 329

Breslau. See *Wroclaw.*

Brest is a naval base and seaport on the Atlantic at the north-west corner of France where the Brittany peninsula ends, 2, 198; 4, 14

Brest-Litovsk is a town of Poland, on the River Bug. It has many important manufactures.

Bretagne is an old-time name for *Brittany* (*q.v.*).

Breton is the term applied to a native of Brittany.

Breughel, Pieter (1525-70). Son of a peasant, he became one of the great painters of the Dutch school.

Brewer, Ebenezer Cobham (1810–97). A clergyman whose claim to fame is that he was author of the *Dictionary of Phrase and Fable.*

Brewster, Sir David (1781–1868), a Scottish scientist, he invented the kaleidoscope; and, with Wheatstone, the stereoscope. One of the founders of the British Association.

Bricks as used for building in this country are moulded from prepared clay. They average 7 lb. in weight, 9 in. in length, 4½ in. in width and 3 in. in thickness.

Bride's Jewels, The. Name given to a wonderful cave at Waitomo, North Island, New Zealand.
Picture: 3, 257

Bridge. A structure which provides a continuous path, road, railway, and even canals across rivers or valleys and sometimes over other roads. The main types are arch, girder, cantilever, and suspension bridges. There are other types, and some bridges are movable to enable shipping to pass: these include swing, or revolving, bridges; lifting or bascule bridges, and transporter bridges. See *Some Triumphs of the Bridge Builder,* 5, 43. (*p.h.*)
—famous railway bridges, 5, 128
Pictures: Quebec Bridge across the St. Lawrence River, 5, 43
Painting the Menai Suspension Bridge, 5, 44
Painting the Forth Bridge, 5, 44
Bridges of various types, 5, 45
A span in the Bally Bridge, near Calcutta, 5, 46
Railway Bridge at Baghdad, 5, 47
Section of Hudson River Bridge, U.S.A., 5, 48
Steel cables in position (Hudson River Bridge), 5, 49

LEAF-SHAPES AND THEIR NAMES



Botany (see p. 48) is the science which deals with the study of Plant Life, and this study must have begun in the very distant past. Primitive man learned to distinguish the growing herbs that were good for food from those which he had to avoid because of their harmful effects. Later he learned to distinguish those plants which, although harmful in large quantities, had a curative effect when used in small quantities. One of the first means of distinguishing the plants would be by the shape of their leaves. In the drawing above are shown some twenty leaves, each typical of a recognised type, the name of which is shown in brackets: 1. Thrift (linear); 2. Corn-cockle (lanceloate); 3. Red Campion (ovate); 4. Dog Violet (cordate); 5. Lesser Bindweed (sagittate), 6. Daisy (spatulate), 7. Marsh Pennywort (pellate and orbicular), 8. Scarlet Pimpernel (sessile), 9. Greater Celandine (lobed); 10. Meadow-grass (sheathed); 11. Chicory (clasping); 12. Yellow-wort (perfoliate); 13. Buttercup (palmate); 14. Rose (primate); 15. Hemlock (compound pinnate), 16. Goose-grass (whorled); 17. Yellow Rattle (serrate); 18. Ground Ivy (crenate); 19. Dandelion (runcinate); 20. Ripplewort (lyrate).

Sydney Harbour Bridge in construction, **5**, 50, 51
Tyne Bridge in construction, **5**, 51
Howrah Bridge, Calcutta, **5**, 52
For Bailey Bridge Building, **5**, 178
Colour Plate: Sydney Harbour Bridge from the City, **3**, *facing* 204
Photo-tone Supplement Bridges Big and Little, **5**, *between* 64 and 65

Bridge, Sir John Frederick (1844–1924). A famous English musician, he was organist at Westminster He published several cantatas and oratorios

Bridge of Allan is a town of Stirlingshire, Scotland. It stands on the famous Allan Water

Bridge of Earn. A village of south-east Perthshire on the river Earn.
Picture: **3**, 137

Bridge of Sighs. (1) The name of a famous bridge in Venice linking the Doges' Palace and the state prison. (2) Name given to a bridge at St. John's College, Cambridge.
Picture **3**, 67
Photo-tone Supplement: Bridges Big and Little, **5**, *between* 64 *and* 65

Bridges, Robert Seymour (1844 1930). Beginning life as a doctor, he afterwards devoted himself to literature. In 1913 he was appointed Poet Laureate, **7**, 154
Poem: First Spring Morning — A Child's Poem, **9**, 104

Bridgetown. The capital of the British island of Barbados in the West Indies, **3**, 398
Picture **3**, 397

Bridgnorth is a manufacturing town of Shropshire. It stands on the River Severn.
Picture. **7**, 118

Bridgewater, Francis Egerton, Duke of (1736–1803) He designed a canal from his Worsley estate to carry coal to Manchester. Considered the father of English inland navigation.

Bridgwater, Somerset. A market town and port on the River Parret. It is associated with the Monmouth Rebellion. The birth-place of Robert Blake, the distinguished admiral, **3**, 56

Bridle-Path. A narrow path suitable for riding or leading horses along, but not wide enough for vehicles. Many old bridle-paths have been widened into modern roads.

Bridlington is a famous seaside holiday resort of the East Riding of Yorkshire.

Bridport. An historic port of Dorset noted for the ropes and netting it makes

Brieg. (1) A town of Silesia interested chiefly in textile industries and now in Poland. (2) A town of Switzerland at one end of the Simplon Tunnel, **4**, 64

Brierley Hill is a town of Staffordshire well known for its pottery and other industries.

Brig. A two-masted sailing vessel, both masts being square-rigged.

Brigantine. A sailing vessel with two masts, one of them square-rigged.

Brig o' Turk is a village in the highlands near Glasgow. Here a band of famous artists lived and worked, **7**, 105

Brighouse. A textile town of the West Riding of Yorkshire noted for its woollens and carpets.

Bright, John (1811–89). One of the best-known statesmen of the nineteenth century Probably the greatest orator of his time, **2**, 220

Brightlingsea is a town and port of Essex at the mouth of the River Colne It is famous for its oysters.

Brighton, Sussex. One of the best-known seaside resorts in the world. Hove adjoins Brighton, **3**, 36
Picture. An early cricket match at Brighton, **2**, 218

Brighton Road, The. The classic highway between London and Brighton, 51½ miles in length. It runs through Croydon, Redhill and Crawley. A23 in the Ministry of Transport's classification, **5**, 38

Brimstone Butterfly. One of the earliest butterflies of the summer, it will have slept through the winter in some sheltered place, **1**, 253

Brindisi is an ancient town and port on the "heel" of Italy, facing the Adriatic Sea, **4**, 154

Brindled Gnu. One of the two varieties of gnu, which is found only in Africa. The other sort is the white-tailed gnu. See *Gnu.*

Brindley, James (1716–72). One of the great engineers of the eighteenth century, he planned for the Duke of Bridgewater the canal from Worsley to Manchester, including the aqueduct over the Irwell Altogether he constructed over 350 miles of canals, including the Grand Trunk Canal These canals were of the greatest importance in helping to build up Britain's industrial prosperity.

Brine is a strong solution of salt and water. Sea water is weak brine and the sea is therefore spoken of jestingly as the briny.

Brintell, Leigh. One of the pioneer pilots of the air services to Canada's remote North-West Territories. He was especially concerned with the opening up of the Mackenzie District, **3**, 166

Briquette is the name given to a fuel made from coal dust held together with tar, clay and chalk.

Brisbane is the capital of Queensland, Australia, and stands on the river of the same name, about eighteen miles from the sea Unlike other Australian capitals, it has a sub-tropical climate, **3**, 228
– its early history, **3**, 204
Pictures: Brisbane, Port and Capital, **3**, 227
Queensland's capital from the Air, **3**, 228
Pictorial Map **3**, 243

Bristol. A large university city in the west of England having many industries, including tobacco and chocolate. The old port from which the Cabots sailed to discover Newfoundland, **3**, 26, 32, 72
—air raids during the Second World War, **2**, 399
Pictures: Reform Riots at Bristol (1831), **2**, 209
Queen Elizabeth's visit, **2**, 409
View from the Cabot Tower, **3**, 29

Bristol, a Boeing flying-boat which earned a great reputation for comfort and air performance.
Picture: **5**, 201

Britain, Battle of. See *Battle of Britain.*

Britain of the South. A name often given to New Zealand, **3**, 249

Britannia. The name given by the Romans to ancient Britain. It is also applied to the symbolic figure of an armed female, seated, holding the trident of Neptune in her left hand, while her right holds a shield and the sea is at her feet. In some cases Eddystone lighthouse is introduced and in others a ship is also brought in. In different forms this figure has been used on British copper coinage and on military and naval medals. The original design was adapted from the figure on Roman coinage and was first used in the time of Charles II to symbolise Great Britain. (*p.h.*)

Britannia, Name of a ship used for the training of naval cadets She was stationed at Dartmouth and to her went the royal princes George and his brother in 1877. *Britannia* was also the name of the Royal Yacht, **2**, 229
Pictures: – the Royal yacht, **2**, 229
—the training ship, **2**, 230

Britannia Metal, out of which forks, spoons and teapots are made, is tin and antimony mixed, **6**, 129

Britannia Tubular Bridge, built by Stephenson, carries the L M S Railway over the Menai Strait, **5**, 48

British Association. A society for the advancement of science, founded in 1831. Its annual meeting is usually held in a large provincial town and addresses are delivered by eminent scientists, covering a wide range of subjects.

British Broadcasting Corporation, The, began in 1922 as a limited company In 1926 a Royal Charter was granted, the first director-general being Sir John (now Lord) Reith. The listener's annual fee of 10s 0d was raised to £1 in 1946 The number of licences now in force is well over 10 million, **2**, 241, 412, **6**, 204
See *The Marvel of Radio,* **6**, 199 *et seq.,* also *Television, the Magic Mirror,* **6**, 219 *et seq.*
Photo-tone Supplement (*Modern Architecture*): Broadcasting House, **7**, *between* 288 and 289

British Columbia is a province of Canada and lies between the Rocky Mountains and the Pacific. It has rich forests and mines. Victoria is the capital, **3**, 168
—salmon fisheries, **3**, 174
– apricots and peaches, **3**, 181
Pictures Making a Raft, **3**, 168
The Great Salmon Industry, **3**, 171
Cooking and Canning, **3**, 172
From Canada's Forests, **3**, 173
British Columbian Salmon Harvest, **4**, 381, 382
Newsprint from Canada, **4**, 383
Photo-tone Supplement: Among the Canadian Rockies, **3**, *between* 160 and 161

British Commonwealth of Nations. See *Commonwealth of Nations.*

British Council, established 1934, incorporated by Royal Charter 1940, to promote knowledge of Britain and the English language in other coun-

tries as well as promoting cultural relations with other nations. Some 33 Institutes which give English lessons, provide libraries, etc., have been established in foreign countries and 80 Associations in Empire and other countries now exist.

British East Africa. The Commonwealth lands in East Africa consist of Kenya Colony and Protectorate, Uganda Protectorate, Zanzibar and Pemba (protectorate), and the Tanganyika Territory which was formerly a German colony and was placed in Britain's care by the League of Nations. All these lands are dealt with separately in this index. See also *British East Africa*, **3**, 369 *et seq.*; **4**, 380
Pictures: Cutting Sisal on a Kenya Plantation, **4**, 369
African Sisal for String and Rope, **4**, 369

British Electricity Authority controls the production and supply of electricity. Its development schemes include an ambitious hydro-electric project in North Wales, **3**, 108

British Empire Stamps. Postage stamps of the British Commonwealth that are interesting to collectors.
Pictures: Early British Empire Stamps, **4**, 406
Some British Empire Issues, **4**, 416

British European Airways. One of the Government Corporations controlling the airways system of Great Britain, **5**, 234

British Gambia. See *Gambia*

British Guiana. This colony is the only British Commonwealth territory on the mainland of South America. The capital is Georgetown. The colony grows sugar, rice, coconuts and other crops. There are immense deposits of bauxite and over a million tons of this ore is exported each year, the bulk of this going to Canada. See *British Guiana*, **3**, 385; **4**, 386, 390

British Honduras. This colony is the only part of the British Empire in Central America. Its population is a little over 59,000 and its capital is Belize. There are tropical forests containing mahogany, logwood, and cedar in the colony, **3**, 399

British Museum, The, is one of the greatest public institutions in the world and is situated in Bloomsbury, London. It began in 1753 with the purchase of Sir Hans Sloane's collections of books, manuscripts, coins, medals, natural history specimens, etc. Other collections were bought later and in 1759 the Museum was opened to the public. The original house was gradually rebuilt between 1828–57. A large new wing was added in 1914.
The natural history collections were moved to South Kensington in 1880–83. In the British Museum Library are some four million volumes. A copy of every book, pamphlet, newspaper, etc., published in the United Kingdom must be sent to the Museum.
Picture: **3**, 13

British National Antarctic Expedition, under the command of Robert Falcon Scott, left England in 1901 to obtain further knowledge of the Antarctic. Its ship was the *Discovery*, **2**, 368 *et seq.*

British North Borneo represents a part of the large island of Borneo, in the Malay Archipelago. Sugar and rubber are important crops. Sandakan is the capital

British Oak. The larger of the two kinds of oak tree common in the British Isles, **1**, 395, 397
Picture **1**, 396
See also *Oak*.

British Overseas Airways Corporation controls a vast system of air transport throughout the Commonwealth and to many different parts of the world. See *Conquering the Air*, **5**, 183 *et seq.*, 234

British Somaliland. A protectorate on the north-eastern coast of the African continent. Berbera is the chief town, **3**, 388

British South Africa consists of Southern and Northern Rhodesia, the Nyasaland and Bechuanaland Protectorates, and Basutoland and Swaziland. All these are dealt with separately in this index

British South American Airways. One of the three Government Corporations controlling the airways system of Great Britain, **5**, 234

British Trees of Great Size. Cowthorpe oak, Damory's oak, Fairlop oak, Queen beech of Ashridge, Baldowie House beeches, Black poplar at Truss, **1**, 331-2

British West Africa. This part of our Commonwealth consists of the colonies and protectorates of Nigeria and Gambia, the Gold Coast Colony with Ashanti and the northern territories, and the colony and protectorate of Sierra Leone. In addition, British rule extends over parts of Togoland and the Cameroons under United Nations trusteeship. All these lands are dealt with separately in this index. See *British West Africa*, **3**, 379 *et seq.*, **4**, 384

British West Indies. The West Indies are the chain of islands lying off Central America between the Atlantic Ocean and the Caribbean Sea. British possessions here consist of the Bahamas, Barbados, Jamaica, the Leeward Islands, Trinidad, and the Windward Islands. These are all dealt with separately in this Index. See *The British West Indies*, **3**, 395

British Wild Birds. See *Birds and their Ways*.

British Wild Flowers. See *Flowers of the Wayside*.

Brittany is a district of France divided into five departments. It is due south of the Channel Islands and projects into the sea as a peninsula, **4**, 15

Britten, Benjamin (born 1913) is a contemporary British composer who has attained fame in recent years. His opera "Peter Grimes" has been described as the first great English opera of the century, **7**, 194

Brittle Starfish. A curious creature which breaks itself to pieces so that only the centre disc remains, **1**, 234

Brixham is a market town of Devon on Tor Bay. It has its own fleet of trawlers for it is also an important fishing port, **3**, 46

Briza. Name of a wild grass often known as quaking grass.
Picture: **1**, 301

Brno. The second largest town in Czechoslovakia and an important centre for textile and glass manufactures and sugar refineries, **4**, 92

Broadcast means to scatter or disperse over a large area, as seed when sown by hand. It was originally an agricultural term. Nowadays news is broadcast or spread far and wide through space by wireless.

Broadcasting was unknown in Britain until 1922 when more or less regular programmes began to be transmitted from studios in London, **2**, 240
Picture: London's First Broadcasting Studio, **2**, 234
See also *British Broadcasting Corporation* and *Radio*.

Broads was the name given to large English gold coins in the time of Charles II. They were worth 20s.
Picture **8**, 299

Broads, The, is the name given to shallow lakes in low-lying districts of Norfolk and Suffolk, **9**, 309

Broadstairs is a town and seaside resort of Kent. It contains Fort House, where Dickens wrote many of his books.

Broca, Paul (1824–80). A professor at Paris, he devoted himself mainly to the study of the skull and brain.

Brock. Name given to the badger, **1**, 122, **9**, 363

Brocken is the name of the highest peak in the Harz Mountains of Germany. It is reputedly the meeting place of witches on Walpurgis Night, **4**, 85

Brockenhurst. Place in Hampshire so named because the brock or badger was once found extensively there, **1**, 123

Brodick is a town and holiday resort on the Island of Arran off the Scottish coast.

Brodribb, John Henry. See *Irving, Sir Henry*

Broken Bones often require as first aid (pending the arrival of a doctor) the application of a splint—a walking stick, umbrella or something similar tied with handkerchiefs, mufflers or any strips of material, **8**, 241
Pictures: Fractures of: Leg Bone, Knee-Cap; Right Collar-Bone and Upper Arm. How to splint and bandage, **8**, 243

Broken Hill is a town of New South Wales, Australia, with a population of over 27,000. It is a very important mining centre with rich silver-lead deposits, **3**, 236
Picture: Broken Hill Steel Works, New South Wales, **6**, 55
Pictorial Map: **3**, 243

Broken Hill. A mining town of Northern Rhodesia where lead and zinc are obtained.

Bromide is a chemical combination of bromine (a very heavy, reddish-brown liquid element; symbol Br.) with a metal. Bromides of potassium and sodium are used in medicine, and bromide of silver, which is peculiarly sensitive to the action of light, in photography.

Bromsgrove. A town of Worcestershire noted for button-making.

Brontës, The, Charlotte, Anne, and Emily, were famous literary figures of the first half of the nineteenth century. Anne (1820–49) wrote *The Tenant of Wildfell Hall*; her sister, Emily (1818–48) wrote *Wuthering Heights*; while the third sister, Charlotte (1816–55) wrote *Jane Eyre*, 2, 411

Brontosaurus, a prehistoric animal of giant proportions known as the thunder lizard, 1, 17
Pictures: 1, 24-5, 36

Bronx, The. This is the name given to a section of New York City, 4, 268

Bronze is a compound of copper and tin with a little zinc and lead. British bronze coins contain 95 per cent copper, 4 per cent tin and 1 per cent zinc, 6, 112, 117

Bronze Age, The, is that period of history when man used bronze for making weapons, tools and utensils, 9, 320
Picture: 9, 322

Brooder is the name given to an appliance in which chicks may be reared. It is generally warmed with an oil lamp, 6, 385

Brooke, Sir Charles Vyner. Rajah of Sarawak who ceded his kingdom to the British Crown in 1946 when it became a colony, 2, 330

Brooke, Sir James (1803–68). He assisted the Sultan of Borneo in putting down a serious rebellion and was made Rajah of Sarawak, 2, 325 *et seq.*
Pictures. The Palace of Rajah Brooke, 2, 325
A Scene in Sarawak, 2, 326
The White Rajah, 2, 330

Brooke, Rupert (1887–1915). One of the best-known of modern English poets. His fame rests mainly on his war sonnets, published very shortly after his death in Greece, 7, 156

Brooklands. Until 1939 the well-known motor-racing track near Weybridge, Surrey, 5, 174

Brooklyn occupies part of Long Island, U.S.A. It is a section of New York City to which it is joined by bridges, 4, 268

Brookman's Park, on the outskirts of northern London, has a powerful wireless transmitter.
Picture: Short-wave and medium-wave transmitters, 6, 206

Broome. A port of Western Australia and the chief pearling centre of the Commonwealth.
Pictorial Map: 3, 242

Broome Park. A National Trust property near Dorking in Surrey.
Picture: 3, 414

Brooms. A family of flowering shrubs. Their black seed pods curl and then burst, flinging the seeds far and wide, 1, 374

Broom, The Cat and the. A Poem by A. A. Kenny, 9, 91

Brothers' Water is the name of one of the lakes in the English Lake District.

Brougham. A four-wheeled carriage having a box-seat for the driver and footman and drawn by one or two horses. It was named after its designer, Lord Brougham.
Picture: See *Vehicles.*

Broughty Ferry adjoins the city of Dundee. It is a residential seaside town of Angus, standing on the Firth of Tay.

Brown, Arnesby. Well-known British artist, he was associated with the New English Art Club, 7, 111
Picture: 7, 114

Brown, Sir Arthur Whitten. With Sir John Alcock, he made the first direct flight across the Atlantic in 1919, 5, 205; 9, 295

Brown, Ford Madox (1821–93). A celebrated English painter, 7, 94
Picture: The Last of England, 7, 94
Chaucer and his King, 7, 127
The Tragedy of King Lear, 7, 134

Brown, George Douglas (1869–1902). A Scottish novelist, he wrote *The House with the Green Shutters.*

Brown Bear. See *Bear, Brown.*

Brown Hyaena. One of the three varieties of hyaena, 1, 84

Brown Owl. See *Owl.*

Brown, Robert (1773–1858) A Scottish botanist. He brought home from a survey of the Australian coast under Captain Flinders 4,000 specimens of plants, mostly new.

Brown Willy is the highest hill in Cornwall, 1,375 ft. It is found on Bodmin Moor.

Browne, Charles Farrar (1834–67). An American humorous writer, works are identified with his pen-name Artemus Ward.

Browne, Hablot Knight (1815–82). Known as "Phiz," he illustrated *Pickwick* and created in pictorial form many of the Dickens characters.

Browning, Amy Katherine. A modern British artist, who paints joyous pictures of open-air life. Her husband, T. C. Dugdale, R.A. (1880–1952), was a well-known portrait painter, 7, 118

Browning, Elizabeth Barrett (1806–61). Wife of Robert Browning and herself a poet of great distinction, 7, 148

Browning, Robert (1812–89). A poet whose work is widely recognised. He devoted his life to literature and music. His wife, Elizabeth Barrett Browning, was also a fine poet, 2, 221; 7, 148
Picture: 7, 150
Colour Plate: How They Brought the Good News, 7, *facing* 144
Poems: Home-Thoughts from Abroad, 9, 103
Morning, 9, 112

Brown Rat. See *Rat, Brown.*

Brown-Séquard, Edward (1818–94). A physician who was born in Mauritius. He made important discoveries regarding the functions of the blood, the nature of animal heat and the nervous system.

Bruce, Brig.-General the Hon. C. G. He was leader of expeditions to Mount Everest, 2, 389

Bruce, Captain Geoffrey, accompanied his father, Brig.-Gen. the Hon. C. G. Bruce, on the Everest expedition of 1922, 2, 389

Bruce, James (1730–94). A Scottish explorer of Africa, he tried to discover the source of the Nile and actually reached the source of the Blue Nile in 1770, 3, 276

Bruce, Robert (1274–1329). King of Scotland, he fought fiercely against the English, 2, 113 *et seq.*
Pictures: At Bannockburn, 2, 115
On the Field of Bannockburn, 3, 110

Bruges. A city of Belgium. It is famous for its belfry and other fine buildings of the Middle Ages when it was one of the greatest trade centres in Europe. 4, 19 *et seq.*; 5, 53; 7, 12
—Caxton lived at Bruges, 2, 137
Picture: 4, 20

Brummell, George Bryan (1778–1840). Beau Brummell's claim to notoriety is that he was one of the greatest dandies of all time.

Brunanburgh, Battle of (937). At this battle, the forces of Athelstan defeated a mixed army of Scots and Danes, 2, 404

Brunei. A state of the north-west coast of the island of Borneo and a British protectorate. The capital is the town of the same name, 3, 404

Brunel, Isambard Kingdom (1806–59). He was born at Portsmouth and assisted his father in the building of the Thames Tunnel. Engineer of the main line of the Great Western Railway, he designed the Clifton Suspension Bridge and built the first screw steamer, the *Great Britain.* He also planned the steamer *Great Eastern*, 5, 250

Brunel, Sir Marc Isambard (1769–1849). The son of a small farmer in Normandy, he served in the French Navy. Projector and engineer of the Thames Tunnel. Father of Isambard Kingdom Brunel.

Brunsbuttel is a port of Germany at the western end of the Kiel Canal, 4, 46

Brunswick is a large district of Germany having timber and mineral wealth. Its capital is a city of the same name

Brussels, in Brabant Province, is the capital of Belgium. It is an impressive city and has many industries and fine buildings. The population exceeds 900,000, 4, 24
—Nurse Cavell at Brussels, 2, 237
—liberated by the Allies, 2, 256
Pictures: Brussels Palace of Justice, 4, 21
Held against Napoleon, 4, 21
The Lion of Waterloo, 4, 23
Old Guild Houses in Brussels, 4, 24
Broadcasting House, Brussels, 4, 25

Brussels, Treaty of (1948), was signed by Britain, France, Belgium, Holland and Luxembourg. It provides for these countries to help one another in peace and war, and remains in force for 50 years, 2, 258, 414

Brussilov, Alexei Alexeievich (1853–1926). A Russian soldier who commanded the Russian forces in the First World War, 2, 238

Brutus. One of the great friends of Julius Cæsar, but eventually one of his assassins' accomplices, 2, 78

Bruxelles is the Belgian spelling for the name of their capital, Brussels.

Brynmawr is a colliery and iron works town of Breconshire, South Wales.

Bryony. Name of two climbing plants, known as Black Bryony and White Bryony. They are not related to each other. Black Bryony is sometimes known as Our Lady's Seal; its botanical name is *Tamus communis*, a member of the yam family. White Bryony is common in woods

THE QUEEN'S SCOUTS AT WINDSOR



Graphic Photo Union.

The Queen's Scouts Badge is the highest Proficiency Badge of the *Boy Scouts Association* (see p. 49). Before gaining this a Scout must hold various qualifying badges, including four Senior Public Service Badges, which must include the Ambulance Badge. A service is held at Windsor each year on St. George's Day, and our photograph shows 1,000 Queen's Scouts, drawn from every county in the British Isles, marching to St. George's Chapel for the Service, after a Royal inspection.

and thickets in South England and known for its scarlet berries in the autumn. It has curious spiral tendrils and both leaves and berries are poisonous, **1**, 305; **8**, 244

B.Sc. means Bachelor of Science.

Bubonic Plague. A scourge affecting human beings said to be spread by the black or Alexandrine rat, **1**, 137

Buccaneer. A pirate, especially one of the seventeenth century, who preyed upon Spanish trade and possessions in the West Indies and on the coasts of Central America. See *Romance of the Sea*, **8**, 47 *et seq.*

Bucephala. A city of India built by Alexander the Great in memory of his famous war-horse Bucephalus, **2**, 41

Bucephalus. Famous war-horse first broken in and then used in battle by Alexander the Great, **2**, 41
Pictures: With the King's Grooms, **2**, 39
Tamed by Alexander, **2**, 40
Going into Battle, **2**, 41

Buchan is a district of north-east Scotland, partly in Aberdeenshire.

Buchan, Alexander (1829–1907). A well-known Scottish weather expert. He discovered certain periods of the year when the temperature, instead of rising, would fall and *vice versa*. These "Buchan cold spells" are Feb. 7–10; Apl. 11–14, May 9–14; June 29–July 4; Aug. 6–11 and Nov. 6–12. Hot spells are July 12–15 and Aug. 12–15, **5**, 2

Buchan, John (1875–1940). Scottish writer and statesman. Author of *The Thirty-nine Steps*, *Prester John*, *Greenmantle*, many other novels, histories and biographies. Governor-General of Canada, he became the first Lord Tweedsmuir, **7**, 251
Picture. **7**, 252

Buchanan, Robert (1841–1901). British poet and novelist. He was born in Staffordshire.

Bucharest, capital of Roumania. See *Bukarest.*

Buchini, Antonio was a servant of George Borrow during the latter's adventures in Spain, **2**, 352
Picture: **2**, 352

Buckbean, a plant that is often called the bog bean because it grows in marshy places. It is used in the preparation of certain medicines, **1**, 333
Picture: **1**, 334

Buckfastleigh is a small town of Devon famous for its Abbey.

Buckie. A town of Banffshire, Scotland. It has fishery interests.

Buck Indians is the name given to the natives of Guiana. Many live in Indian Reservations, **3**, 386

Buckingham Palace is the London residence of the Queen. It stands on the site of the old Mulberry Garden and was originally built by John Sheffield, Duke of Buckingham. King Edward VII was born at the Palace (1841), **2**, 223
—it was bombed during the war, **2**, 251
Pictures: Coronation Day, 12th May, 1937, **2**, 243
African Rulers at Buckingham Palace, **2**, 257
The Royal Wedding, **2**, 264
The Happiness of a Royal Christening, **2**, 266
The East Front, **3**, 7

Buckland, Francis Trevelyan (1826–80). English writer on natural history, noted specially for his knowledge of fish.

Buckinghamshire is one of the English counties, famous for its beech woods, chair-making and agricultural products. The small town of *Buckingham* is in the north of the county. Aylesbury is the county town. Other towns include High Wycombe, Stowe, Beaconsfield, Eton, Marlow and Amersham. (*Abbrev.* Bucks.)

Buckland Abbey in Devon was at one time the home of Sir Francis Drake. In 1947 it was handed over to the National Trust as a Drake naval museum.

Buckler Fish. A creature with an enormous head shield or buckler. It had no teeth, **1**, 15

Buckthorn. We have two varieties of this shrub. The better-known sort bears thorns and produces berries from which a medicine for dogs is made. The other kind has no thorns.
—berries black and poisonous, **1**, 344
Picture. **1**, 14, 346

Budapest, which consists of two cities Buda and Pest, standing on either side of the River Danube, is capital of Hungary. The city has many commercial and industrial interests, but Budapest was reckoned to be one of the most badly damaged cities in Europe at the end of the Second World War, **4**, 92, 93
Pictures: Peasants sell embroidery in the Hungarian capital, **4**, 96

Buddha, Gautama, born about 560 B.C., he was founder of the religion known as Buddhism. Throughout the world there are at least a hundred million Buddhists. Buddhism is the religion of Burma, Ceylon, Japan, China, etc., **2**, 402 *et seq.*
—a tooth of Buddha is enshrined at the Temple of the Tooth, Kandy, Ceylon, **3**, 366
—the footprint of Buddha, **3**, 367
Pictures: The Temple of the Tooth, **3**, 365
Burma's "Lord of Heaven," **4**, 221
At Kamakura, Japan, **4**, 251

Budding. Method of propagation. Rose bushes are budded on wild briar stocks; fruit trees on special stocks, **1**, 287

Buddle is the name given to the pond into which silver ore is placed to prepare it for the final washing.
Picture. **6**, 104

Buddleias. Name of flowering shrubs named after the botanist Buddle. One variety bears racemes of purple flowers and another golden balls.

Bude is a seaside town of North Cornwall famous for its rugged coastal scenery.

Budejovice. See *Budweiss.*

Budgerigars are small birds belonging to the parrakeet family and very popular as pets. They do well in a sunny aviary or may be kept in cages. Bred in many colours, **8**, 312
Photo-tone Supplement: Wild Life in Australia, **1**, *between* 336 and 337

Budget. Contents of a bag or bundle, but generally used in connection with news in the sense of a mixed collection of items. The word is also used to indicate the financial statement made to the House of Commons by the Chancellor of the Exchequer, giving details of the money spent and the sums received from taxes, etc., by the Government and the estimate of the country's expenditure during the coming year as well as ways in which this money will be raised, **9**, 318

Budleigh Salterton is a seaside holiday and residential town of South Devon. Its old name Salterne means Saltpan, for it was once a place of salt-makers.

Buds on plants and trees are of two kinds, one sort producing leaves and branches and the other leaves and flowers, **1**, 282
Picture. **1**, 287

Bud-Scales. Little natural blankets to protect buds from frost. Some are hidden by bark and others thrown off in spring, **1**, 282

Buds to Leaves, From. How trees develop their foliage, **1**, 280

Budweiss is the name of one of the chief towns of Czechoslovakia. It has important lead pencil factories and is known to the Czechs as *Ceske Budejovice*, **4**, 92
Photo-tone Supplement. The Continent of Europe, **4**, *between* 112 and 113

Buenos Aires is the name of (1) a province of the Argentine Republic; (2) the Federal capital of the Argentine Republic. It has a population of nearly 2¼ million and stands on the Plate River estuary, **4**, 317
—visited by Charles Darwin, **2**, 344
Pictures. The Plaza de Mayo, **4**, 323
The Columbus Monument, **4**, 324

Buffalo. An animal of the ox family found in parts of Europe, North Africa and India.

Buffalo is a large city of the State of New York, U.S.A. standing on Lake Erie. It is a great manufacturing and exporting centre and is a port of call for Canadian grain steamers, **3**, 182

Buffalo, Arnee. See *Arnee Buffalo.*

Buffalo Bill. See *Cody, William Frederick.*

Buffalo, Cape. An animal found in South and Central Africa. It has thick, strong horns.

Buffaloes, Water. See *Water Buffaloes.*

Buffalo Gorge is in Mount Buffalo National Park, Victoria, Australia.
Picture **3**, 236

Buffalo Robes was the name given in the early days of Canada to clothing made from the hides of buffaloes, **3**, 176

Buffer. Name of a device for deadening the shock when two things strike together. The buffers at the ends of railway carriages and waggons contain powerful springs or indiarubber pads, which are compressed when the moving parts of the buffers are driven inwards.

Buffon, Georges Louis Leclerc, Comte de (1707–88). Well-known French naturalist, he gave most of his life to the writing of a Natural History, **7**, 230

Bug is the name given to two rivers of Europe. The first is a tributary of the River Vistula, whilst the other empties into the Black Sea.

Buggy is the name given to a light, four-wheeled vehicle drawn by one horse. It was much used in America, but often seen in this country.
Picture: See *Vehicles.*

Bugle is the name of a familiar wild plant. It is so-called from the shape of the blue or white flowers, **1**, 304

Bugle. The familiar bugle is of great antiquity, having as its ancestors horns of various kinds. It is a treble brass wind instrument. In its simple form the bugle's tube has no lateral openings and can produce only the notes of the harmonic series. The bugle is pre-eminently the instrument of the infantry, particularly as a call to the various duties of camp life. To extend the compass of the bugle a system of keys was applied in 1910. Later the introduction of valves led to the saxhorn.
Picture: **10**, 249

Bugloss, Viper's. See *Viper's Bugloss*

Building of houses and other covered places such as shops and meeting-places has a history which goes back to prehistoric times. Many new ideas have been developed in recent years and big building schemes are in hand for new houses, factories, churches and bridges. The House of Commons, Coventry Cathedral, and many other famous places which were destroyed or badly damaged during the last war required rebuilding; new towns are being laid out, while such projects as the great suspension bridge across the Severn have been approved. See *Wonders of Architecture - The Story of the Builder and His Art*, **7**, 279 *et seq*
Photo-tone Supplement Modern Architecture, **7**, *between* 288 and 289

Builth Wells is a spa and health resort of Breconshire standing on the River Wye.

Bukama, in the Belgian Congo, is a town on the Upper Congo River, **3**, 300

Bukarest. Capital of *Rumania* (*q.v.*) and centre of the main railways of the country, it stands in a fertile plane on a tributary of the Danube. Little of the old town now remains but the central districts are all modern. Among its important buildings are the royal palace, the parliament houses, and the university.
—it was occupied by the Germans in 1916, **2**, 238

Bulawayo is one of the largest towns of Southern Rhodesia, **3**, 294, 196
Picture: **3**, 299

Bulbous Lilies. See *Lilies, Bulbous*

Bulbs are best described as being underground buds. They have scales folded over one another, with the flower stalk in the centre. The plants growing from them bear many beautiful kinds of flowers, and are particularly useful for providing colour in the garden in the spring. They can be cultivated indoors, **8**, 280
Pictures: Bulbs in Fibre, **8**, 277
A Guide to Bulb Planting, **8**, 280

Bulbs, Naturalised. See *Naturalised Bulbs.*

Bulgaria is a country of the Balkans and is mainly concerned with agriculture, especially the growing of wheat and fruit. It has mineral wealth, including coal which is difficult to mine because it lies mostly in the mountainous districts. Sofia is the capital. The population is about 7 millions, **4**, 96, 360

Bulkhead. An upright watertight wall or partition of steel plates inside a ship. A bulkhead reaches from the bottom of the ship to a point well above the water line. By means of bulkheads a vessel is divided into a number of water-tight compartments, **5**, 282

Bull, Dr. John (1563–1628). He is believed to have composed the original air of the National Anthem, **7**, 158

Bullace. A fruit mid-way between the sloe and the plum.

Bull-dog. A British breed of dog so called because the animals were once used for the cruel sport of bull-baiting. Its lower jaw projects forward. See *Dogs as Pets*

Bulldozer. A powerful petrol-driven appliance for levelling roads and pulling guns and heavy vehicles in difficult situations. It was used largely in the last war, but is also valuable for work in peacetime.

Bulletin. A short, official statement of news. When an important person is ill, bulletins are issued about the patient's condition. General news and weather bulletins are broadcast daily by wireless.

Bullfinch. A brightly-coloured British bird with a reddish breast. It differs from other finches in the thickness of its head and neck.
Colour Plate. **1**, *between* 160 and 161 (Plate 2)

Bull-Frog, American. See *American Bull-frog.*

Bullhead, or Millers Thumb. A small fresh water fish, with large, broad head and sharp spines on the gill covers.
Special Colour Supplement: British Fresh Water Fishes, **8**, *between* 256 *and* 257 (Plate 2)

Bullion is uncoined gold and silver, in ingots, bars or other masses. The strongrooms of banks may contain millions of pounds' worth of gold in bullion form.

Bullock's Heart. Name given to the *Custard Apple* (*q.v.*).

Bull's Horn Acacia. A Central American tree having horns in which ants make their home, **1**, 353

Bull Terrier. A breed of dog said to be a cross between a bull-dog and terrier. See *Dogs as Pets.*

Bulolo. A rich goldfield in the Territory of New Guinea, developed largely as a result of Australian enterprise, **3**, 244, 390

Bulow, Bernhard, Prince von. He was Chancellor of Germany from 1900–09, **2**, 232

Bump Races are a form of race rowed at both Oxford and Cambridge.
Picture: **3**, 29

Bunche, Dr. Ralph. An American who was Acting Mediator, for the United Nations in Palestine after the assassination of Count Bernadotte, **2**, 414

Bundaberg is a port and farming centre of Queensland, Australia, **3**, 226
Pictorial Map: **3**, 243

Bungah is the name given in India to the home of a Sikh chief, **3**, 338

Bungay is a town of Suffolk noted for its printing works.

Bunker. Name of a large compartment or bin for holding fuel for burning in a furnace. A steamship's bunkers are on each side of the stokeholds.

Bunker's Hill, Battle of (1775) was fought near Boston, Massachusetts, between the American colonists and the troops of General Gage the British commander who won the battle, **2**, 194

Bunsen, Robert Wilhelm von (1811–99). The originator of the Bunsen burner, he was born at Gottingen. In 1841 he invented the carbon-zinc electric battery called after his name.

Bunting. A British bird about 7 in. in length, mainly yellowish brown. A member of the finch family and cousin of the crossbill. The buntings are more numerous in American countries, but five of the family breed in Britain: the Cirl bunting, Corn or Common bunting, Reed bunting, Snow bunting, and the Yellow bunting (or Yellowhammer).

Bunyan, John (1628–88). English Nonconformist preacher, wrote *The Pilgrim's Progress*, part of it in prison, **2**, 166, 168, **7**, 195
Pictures Oak beneath which he preached, **1**, 329
His wife intercedes for him, **7**, 195

Buoy. Ships in harbour are sometimes moored to buoys. These floating objects, of wood and metal, are used to warn vessels from submerged wrecks and dangerous reefs or rocks and to mark a course along which ships may safely pass.
Buoys are sometimes lighted and many of them have bells.

Buoyancy means floating power. An airship owes its buoyancy to the fact that the gas in its gasbags weighs less than an equal volume of air.

Burbank is a town of California, U.S.A., and is an important aircraft manufacturing centre, **4**, 274

Burbank, Luther (1849–1926). Greatest of American plant inventors. He propagated plums without stones, walnuts with paper-thin shells and many scores of new plants. He also deprived the prickly pear of its thorns, **1**, 377
Pictures. The Plant Wizard, **1**, 378
New Blackberry, **1**, 379
All from one Plant, **1**, 380
Hybrid Poppies, **1**, 381
Desert Cacti, **1**, 382
Wild Prickly Pear, **1**, 383

Burchell's Zebra belongs to the same family as the true zebra but has black and yellow stripes, **1**, 94

Burdock. A wayside plant with large leaves growing to a height of about 4 ft. Its seeds have hooks so that they may catch in the fur of passing animals.
—as a plant used for making certain medicines, **1**, 333
Picture: **1**, 370

Bure is the name of a river of Norfolk associated with the Broads.

Burford is a quaint township in the Cotswolds on the little river Windrush. It was an important wool centre in olden times, 3, 24

Burgesses are citizens living in a town or borough in which they have the right to vote, 2, 110

Burgh, Hubert de (died 1243). Chamberlain to King John. Prince Arthur was placed in his custody, 2, 104
Picture: 2, 103

Burgher is the name given to one who lives in a burgh or borough. The word is used specially of townsmen who lived in days when cities were walled and fortified. Nowadays, "burgess" is used in its stead, of any dweller in a borough who has the right to vote at municipal elections.

Burgher. The name given to people of Ceylon who trace their descent from early Dutch settlers, 3, 363

Burghley House is a Northamptonshire seat of the Marquis of Exeter. It was built in the sixteenth century, 7, 320

Burglary is the crime of breaking into a dwelling-house between 9 p.m. and 6 a.m., and is a more serious offence than House-breaking, 9, 338

Burg Sooneck is one of the picturesque castles on the banks of the Rhine.
Picture. 4, 66

Burgundy is one of the provinces of France. It is well known for its wines and farm produce. The chief town is Dijon, 4, 13

Burgundians. A Germanic people who settled in south-eastern France after the fall of the Roman Empire, 4, 5

Burgoyne, John (1722–1792). A British general who commanded the army which surrendered to a superior force of colonists at Saratoga in 1777 during the American War of Independence, 2, 194

Buriat-Mongol Soviet Republic is one of the republics of the U.S.S.R. (Russia). It occupies a region of south-eastern Siberia and is largely a cattle-breeding region, 4, 112
Picture: 4, 109

Burin. One of the tools used by an artist when etching a picture. See *Etching.*

Burke, Edmund (1729–97). Irish by birth, he took to literature. In 1765 he entered Parliament and became famous as an orator and writer, 2, 411

Burke, Robert O'Hara (1820–61). An Australian explorer who went from Ireland to Australia in 1853. His attempt to explore the interior of the continent cost him his life, 3, 204

Burling. This is done by Canadian lumberjacks. Their sharp-shod shoes allow them to stand on floating logs and by taking short backward or forward steps they can "burl" (move) the logs.
Picture: 3, 168

Burma, formerly a province of the British Empire in India, is now an independent republic with its capital at Rangoon. It has been so since January 1948 when Britain handed over authority to the first Burmese President. It is known officially as the Union of Burma and is no longer within the British Commonwealth, although it still has ties with Britain. The total population is nearly 17 million of which 9 million are Burmans. The country has rich timber forests and produces rice and other crops. Tin, lead, and other minerals are mined, 4, 215 *et seq.*, 372, 374
—Burma occupied by the Japanese, 2, 252
Pictures: In a Rangoon Marketplace, 4, 215
A Sampan rower of Burma, 4, 216
Loading the Rice Boats, 4, 217
A Burmese Tomb, 4, 218
A Dagoba, 4, 218
A Stone Elephant, 4, 219
A Temple Guardian, 4, 219
Burma's "Lord of Heaven," 4, 221
A Sacred Building in Burma, 4, 222
Burmese Teak Rafts, 4, 363

Burma Road. This famous overland route from Lashio in Burma to Kunming in China was built to provide a way of getting supplies to China to help her in her fight against the Japanese, 4, 216

Burmese Wars took place in 1824, 1852 and 1885. In the first, Rajah Brooke of Sarawak saw active service, 2, 325

Burnaby, Frederick Gustavus (1842–85). Son of a clergyman he became a Guards' officer, and achieved fame by his ride to Khiva.

Burne-Jones, Sir Edward (1833–98). Welsh by birth and one of our great artists. He studied under Rossetti, 7, 96
Picture. 7, 92

Burnett, Mrs. Frances Eliza Hodgson (1849–1924). One of the best-known of modern American novelists. Author of *Little Lord Fauntleroy.*

Burnham Beeches, belonging to the City of London, is a 450-acre tract of beech-clad woodland near Slough, Buckinghamshire.

Burnham-on-Crouch is a seaside resort, yachting centre and boat-building town of Essex.

Burnham-on-Sea is a holiday resort of Somerset, near Highbridge. It has a sandy beach.

Burnley. A large industrial town of Lancashire. A cotton centre, it has many other manufactures.

Burns require suitable dressings. If the skin is not broken cover with antiseptic oil or ointment and powder with bicarbonate of soda. If the skin is broken, take care not to break any blisters. If possible, immerse in a bowl of warm water containing a teaspoonful of bicarb. of soda to each pint. If a person's clothing catches fire place him on the floor and roll him in rugs, blanket, shawl, tablecloth, or anything else available, 8, 236

Burns, Robert (1759–96). By far the greatest lyric poet Scotland has yet produced. He published his first poems in 1786, 2, 411; 7, 140
Pictures: His Birth-place at Alloway, 3, 111
The National Poet of Scotland, 7, 141

Burrinjuck Dam is on the Murrumbidgee river which is a tributary of the Murray river in New South Wales. The dam provides irrigation for the fields and orchards of New South Wales and Victoria, 3, 213

Burritt, Elihu (1811–79). An American, born of humble parentage, he is said to have learned fifty languages.
—what he wrote about the Duke of Atholl, 1, 321

Burrow. Name given to the home of a rabbit.

Burrowing Owl. A small member of the owl tribe which lives in a burrow made underground. It is an American bird.

Burrs. Name given to plant seeds that stick to our clothes and to the fur of animals, 1, 371

Burslem is a district of the Potteries. It is included in the borough of Stoke-on-Trent, 3, 73

Burton, Sir Richard (1821–90). He was born at Barham House, Hertfordshire. Disguised as a Pathan, he accomplished in 1853 the pilgrimage to Mecca. In 1858 he discovered Lake Tanganyika. He wrote several remarkable books on his travels and translated much Oriental literature including the *Arabian Nights.*

Burton-on-Trent, Staffordshire, is a great centre of the brewing industry, 3, 71

Bury. A large cotton town of Lancashire. It stands on the River Irwell.

Bury, Colonel C. K. Howard. See *Howard-Bury, Col C. K.*

Bury St. Edmunds. A town of Suffolk, its interests have to do mainly with farming. It is named after Edmund, a King of East Anglia.

Bus. *Abbrev.* for *Omnibus* (*q.v.*).

Bush, The, is the name given to uncultivated natural country in Australia. The term is also used for the wild parts of South Africa, 3, 215

Bush-Buck. Member of the antelope tribe found in South Africa.

Bush Harrow. Bundles of brushwood tied to a beam. Farmers use bush harrows to prepare meadowland for a crop of hay, 6, 384

Bushire is a large trading centre and seaport on the Persian Gulf.

Bushmaster. Name of a snake found in Brazil and other parts of South America.

Bushmen are primitive people of South Africa and are considered to be the oldest known Native race of that part of the African continent. They are found mostly in the territory of South-West Africa, where they number about 22,000. Bushman paintings and carvings of great antiquity can be seen, some of them reckoned as dating from 8000 B.C. or even earlier, 3, 286, 302, 307

Bushranger is the name given to a robber or bandit in Australia. Bushrangers were most active there during the later years of the nineteenth century and were to Australia very much what the outlaws were to America, 3, 205 *et seq.*

Bush Vetch. A wild plant with narrow, pointed leaflets.
Pictures: An Ant on the Leaf-scales, 1, 271
The Plant in Flower, 1, 300

Bussorah (Basra). A port on the Persian Gulf in Iraq. Its chief trade is in dates, but it also exports gums, 1, 334

Butcher Bird. See *Red-Backed Shrike.*

Butcher's Broom. Name of a shade-loving shrub which produces bright red berries. In shrub lists it is termed *Ruscus.*

Bute is the name of an island in the Firth of Clyde. It is divided from the mainland by the Kyles of Bute. The principal town is Rothesay.

Bute, Marquesses of, were the owners of Cardiff Castle until 1947, when the Bute family presented the castle to the city of Cardiff, **3,** 95

Butler, Samuel (1612–80). An English satirical writer, his best-known work is the poem *Hudibras,* a witty attack on the Puritans.

Butler, Samuel (1835–1902). He made his name as a writer with his book *Erewhon* (nowhere) which described a visit to an imaginary country. A sequel, *Erewhon Revisited,* was published in 1901. He also wrote a novel, much of which was autobiographical, *The Way of All Flesh.*

Butt, Dame Clara (1873–1936). Famous English singer, her contralto voice possessed exceptional power and wide range. For her great services to charities during the first World War she was created D.B.E. in 1917.

Butte is in Montana, U.S.A. It is the centre of a great copper district.

Butter is an invaluable foodstuff produced by churning the cream of milk.
Pictures. In a Victoria Butter Factory, **3,** 208
Butter in the Cool Stores, **3,** 213
Butter Churning in a New Zealand Dairy Factory, **3,** 264

Buttercup. One of the most familiar wild flowers, often covering our meadows with a carpet of gold, **1,** 291, 301
Colour Plate. **1,** *between* 304 and 305 (Plate 4).

Buttercup, Creeping. See *Creeping Buttercup.*

Butter-Fish. Name of a small fish common in British waters that places its eggs in the form of a ball in holes in rocks.

Butterfly. A creature which begins life as an egg; becomes then a caterpillar and afterwards a chrysalis before reaching its final stage, **1,** 248; **8,** 281
—what is the difference between a moth and a butterfly? **1,** 252
—how are the wings coloured? **1,** 249
—there are many kinds of butterflies in Brazil, **4,** 314, 336
Pictures. Camberwell Beauty, **1,** 254
Red Admiral Butterfly, **1,** 249
Peacock Butterfly, **1,** 254
Swallowtail Butterflies, **1,** 251
Swallowtail Caterpillars, **1,** 250
Working in Butterflies, **4,** 322
Special Colour Supplement: British Butterflies, **8,** *between* 288 and 289

Butterfly and Moth. About the hobby of collecting these insects. How to catch, set and preserve them, **8,** 281 *et seq.*
Pictures: Setting a Specimen, **8,** 281
Moths to take by Assembling, **8,** 282
The Net, **8,** 283
The Killing Bottle, **8,** 284
The Pill Box, The Collecting Tin, **8,** 285
Cabinet Drawer, Store Box and Setting Board; The Cabinet, **8,** 286
Beating the Sallows, **8,** 287
Assembling and Light, **8,** 288
"Sugaring" for Moths, **8,** 289
The Setting Needle, Wing Venation of a Butterfly, **8,** 290
Special Colour Supplements: British Butterflies, **8,** *between* 288 and 289
British Moths, **8,** *between* 288 and 289

Butterfly, Morphos. Hawk-like creature of great size seen by Bates in the Amazon area, **2,** 340
Picture: **4,** 322

Butterfly Cod is a beautiful fish found in the waters of the Great Barrier Reef, off the Pacific coast of Queensland, Australia, **3,** 230

Butterfly Flower. Name given to the annual Schizanthus, because of the shape of its blossoms.

Butterfly, White Pine. See *White Pine Butterfly.*

Butterfly Wing Venation means the veins in a butterfly's wings which have to be considered when setting the insects.
Picture. **8,** 290

Buttermere is the name of one of the lakes in the English Lake District

Butterworts are tiny plants bearing leaves in small rosettes. The leaves are covered with hairs at the end of each of which is a drop of sticky fluid. Thus, the plant catches small insects which it rolls up and sucks dry, **1,** 339

Butt of Lewis is at the extreme north of the Island of Lewis, in the Outer Hebrides

Buttonhole Loops are made where the material is too thick for a buttonhole, **8,** 412
Pictures. Large and small buttonhole loops, **8,** 411

Buttonholes are worked: buttonhole stitch, **8,** 412
Pictures. An Ordinary Buttonhole; A Buttonhole to stand Strain, **8,** 411

Buttons have been in use since before the days of history and serve to ornament many forms of clothing. They may be made of metal, wood, bone, ivory and many other materials, some buttons being covered with cloth or linen.
—sewing on buttons, **8,** 410
Picture: **8,** 411

Buttress. A masonry support built against a wall.

Butts, Mrs. M. I. Well-known writer of stories and verses for children.
Poem. Water Jewels, **9,** 110

Buxton is a famous health resort and town of the Peak District of Derbyshire. It has natural hot mineral springs.

Buys-Ballot, Christoph (1817–90). A Dutchman who gave his name to the Buys-Ballot Law, a statement in meteorology which deals with the relation of wind-direction to high and low pressure areas, **5,** 5

Buzzard. A bird of prey, very rare in the British Isles; member of the hawk and falcon family. In length it is about 20 in., **3,** 176

B.W.I. means British West Indies.

Byelorussia, or White Russia, is one of the republics of the Soviet Union. It lies along the western Dvina and Dnieper and has both agriculture and industry. The capital is Minsk.
Picture: **4,** 116

By-Product. Something produced during manufacture in addition to the principal product. During the preparation of wool for spinning a great deal of valuable grease is obtained from it. This grease is therefore a by-product.

Byrd, Rear-Admiral R. E. (born 1888). An American naval aviator who, when Lieut.-Commander, flew over the North Pole in 1926 with a companion, F. G. Bennett. He later commanded the MacMillan Arctic Expedition (1925) and a big Antarctic expedition in 1946. He is a leading authority on Antarctica and the Arctic, **2,** 361

Byrd, William (1543–1623). An early English composer famed particularly for his church music, **7,** 157, 158

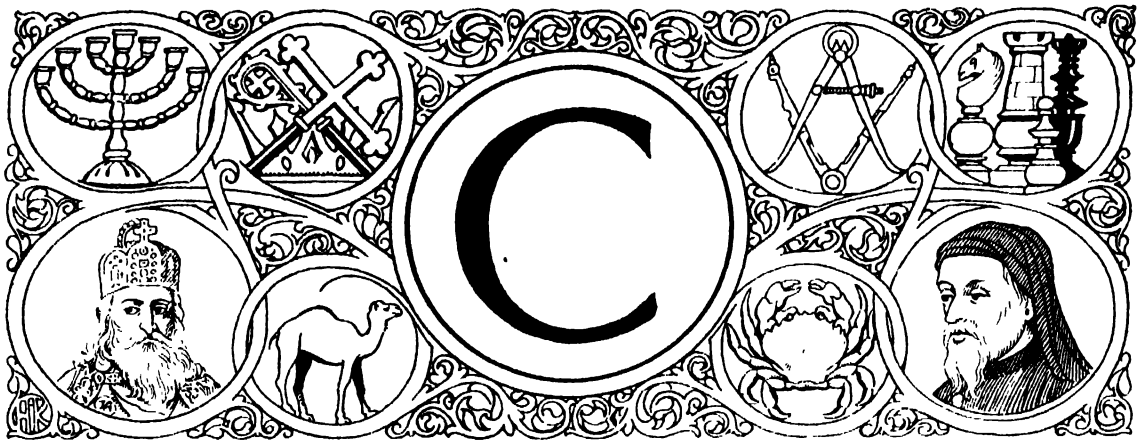
Byre is the name given in some parts of the country to the shed in which cows are kept, **6,** 384

Byron, George Gordon, Sixth Baron (1788–1824). Lame from birth, he became one of our greatest poets. His *Childe Harold's Pilgrimage* brought him instant fame, **7,** 144
he died at Missolonghi in Greece, **4,** 157
Picture **7,** 145

Byssus. Name given to the little threads by means of which mussels cling to rocks, **1,** 227

Byzantine Empire. In A.D. 324 Constantine, the Emperor of Rome, selected the small town of Byzantium as his new capital. Its name was changed to Constantinopolis and when, in 395, the Roman Empire fell into two parts, it became the capital of the Eastern Empire. This was the Byzantine Empire whose most famous emperor was Justinian. After his death in A.D. 565 the empire weakened. In 1453, it came to an end when the Turks took Constantinople from Constantine Palaeologus, the last of the Byzantine emperors. Since then Constantinople, or Istanbul as it is now called, has been a Turkish city, **4,** 159

Byzantium was the ancient name of the city of Constantinople, in Turkey, which is now known as Istanbul (*q.v.*). Byzantium was the chief city of the Byzantine Empire and in A.D. 330 it was renamed Constantinople, **2,** 403



C the third letter of our alphabet, could be dispensed with, except where it is followed by H, as in "church"; for in all other cases either K or S might be used instead. The Romans, it may be noted, gave C the sound of either G or K. When pronounced like K, as in "cat," C is said to be "hard"; when like S, as in "city," to be "soft."

The musical scale of C major differs from all other scales in having neither flats nor sharps, and therefore is called the "natural" scale. In chemistry, C is the symbol for carbon; and in Roman numerals it stands for Centum = one hundred.

Caaing. Another name for the *Pilot Whale* (*q.v.*).

Cab is the name given to that part of a locomotive engine where the driver and fireman stand to do their work. See also *Cabriolet.*
Picture: **5,** 126

Cabal was the name given collectively to the ministers who served King Charles II after the fall of Clarendon. There were five of them (Clifford, Arlington, Buckingham, Ashley, Lauderdale) and their initials spelt this word, **2,** 170

Cabbage. A plant belonging to the Brassica family. It is an important table vegetable and the numerous cultivated varieties include Kale, Brussels Sprouts, Common Cabbage, Savoy, Sprouting Broccoli and Cauliflower.

Cabbage Butterfly. The most common British butterfly; it lays its eggs on cabbage leaves, its grubs being most destructive, **1,** 253
Picture: A Gas Attack on an Old Enemy, **1,** 390

Cabbage Lettuce is the flattened form of this useful vegetable. See *Lettuce.*

Caber. A thick, heavy pole, used in the Highlands of Scotland in games, when men toss the caber as a feat of strength.
Picture: **3,** 133

Cabin-boy. Originally used for the boy who waited on those who had cabins on board ship, but often applied to the youngster who was taken on board a naval vessel by the captain to learn seamanship and in due course become a naval officer. Many famous sailors such as Nelson began their career at sea as cabin-boys or "Captain's servant" and were favourably placed for promotion to midshipman rank, **8,** 8

Cabinet. "The Cabinet" is the group of the chief ministers of the Crown who decide upon the policy of the Government. It usually consists of the Prime Minister, the Chancellor of the Exchequer, the Foreign Secretary, the Home Secretary, the Secretary of State for Scotland, the Secretary of State for War, the First Lord of the Admiralty, the Secretary of State for Air, the Secretaries for the Dominions and Colonies, the Ministers of Labour and National Service, Fuel and Power, Education, Health, Agriculture and Fisheries, as well as the Lord High Chancellor, the Lord President of the Council and the Lord Privy Seal.
Like other parts of the British constitution, the Cabinet has become established by custom. It has no legal status, and the Prime Minister decides which Ministers shall be included in it. There are a number of Ministers in the Government who are not in the Cabinet, **9,** 56

Cables, Submarine. Under most of the seas and oceans of the world there are cables which are submarine telegraph and telephone lines. The cost of such a cable may be a million pounds, **6,** 178
Pictures: A Power House under the Sea, **6,** 178
Cable-Mending and Equipment for It, **6,** 180
Landing and Grappling for Cables, **6,** 183
Paying Out the Cable, **6,** 184
Miles of Submarine Cable in Store, **6,** 185
Landed! **6,** 187
A Nice Little Fish-Hook, **6,** 188

Cabot, John (1450-98). A Venetian, he became a Bristol merchant. In 1497 he set out in the *Matthew* and discovered Cape Breton Island. Later he discovered Newfoundland and Nova Scotia, **2,** 139, 278 *et seq.*, **3,** 29, 32, 155
Picture. **2,** 281
Coloured Frontispiece: The Age of Discovery, Vol **2**

Cabot, Sebastian (1474-1557) was the second son of John Cabot (*q.v.*). He shared in his father's voyages of discovery.
Picture. **2,** 281

Cabo Tormentosa, the Cape of Torments, was the name given by an early voyager to the Cape of Good Hope, **3,** 275

Cabot Tower is on Brandon Hill at Bristol and commemorates the achievements of the Cabots, **3,** 32
Picture: **3,** 29

Cabral, Pedro Alvarez de (1460-1526) A Portuguese sailor who discovered Brazil, **2,** 406; **4,** 311

Cabriolets were the earliest horse-drawn conveyances to ply for hire in towns. They first appeared in Paris about the year 1650. We have now shortened the name to "cab" as used in "taxi-cab."
See *Vehicles*

Cacao is the name of a tree native to the tropical countries of America. From the seeds of this tree cocoa and chocolate are made. The Gold Coast is a great centre for growing cacao, **3,** 380 *et seq.*

Cacahuamilpa, a place in Mexico, is noted for its cavern which contains sheet-like stalactites.

Cachalot is another name for the *Sperm Whale* (*q.v.*).

Cache is the name given to a hidden store of food and other necessaries. By making a series of caches along a route, explorers and hunters ensure having supplies during the return journey.

Cactus (pl. *cacti*). Desert-growing plants covered with thin, sharp spines for protective reasons. Even the fruits have thorns, **1,** 291, 351
Pictures: Candlestick Cactus, **1,** 355
Thorns, **1,** 353
Photo-tone Supplement: United States of America, **4,** *between* 272 and 273

Cactus Dahlia. So called from the form of its flowers. Reaches a height of 5 ft.

Cadbury, George (1839-1922). Quaker

cocoa manufacturer who founded the garden city of Bournville.
Cader Fronwen is a peak of the Berwyn Mountains in North Wales, 2,568 ft. in height.
Cader Idris. A mountain peak of Wales rising to a height of nearly 3,000 ft. It stands in Merionethshire.
Picture: **3,** 107
Cadia. A town west of Lithgow, in the state of New South Wales, Australia, which is an iron ore centre, **3,** 238
Caddis Fly. Name given to an order of hairy-winged insects which look like light and graceful moths. They feed on the juices of plants. There are over 150 different species in Britain.
Cadiz. (1) Name of a province of Spain. (2) Name of the capital of the province, a large port, naval centre and busy commercial city, **2,** 198, 278, 406
—Drake destroyed many vessels in Cadiz Harbour, **2,** 148
—George Borrow visited Cadiz, **2,** 352
Caedmon. A poet of the seventh century who lived at Whitby, Yorkshire. He died about 680, **2,** 84, **7,** 125, **9,** 337
Caen is an ancient town of Normandy. It has manufacturing interests to-day. The church of St Etienne contains the tombs of William the Conqueror and his queen.
Caerphilly is a town of Glamorganshire, South Wales. It has a ruined castle and gives its name to a well-known cheese.
Cæsar, Julius. See *Julius Cæsar*
Cæsar was the favourite terrier of King Edward VII. The animal was present at the state funeral, led by a Highland retainer.
Picture **2,** 228
Cagayan Valley is on the island of Luzon in the Republic of the Philippines. It is a fertile region yielding such crops as tobacco, **4,** 212
Cagliari is the chief town of the Italian island of Sardinia in the Mediterranean. It stands on the shores of the Gulf of Cagliari in the south of the island, **4,** 154
Cagni, Captain. An Italian, he was a member of the Duke of Abruzzi's Polar Expedition, **2,** 358
Caine, Sir Thomas Henry Hall (1853–1931). An English novelist, many of his works were identified with the Isle of Man. Author of *The Deemster, The Bondman, The Eternal City,* etc.
Caique is the name of a distinctive type of sailing vessel common in eastern Mediterranean waters.
Picture: **4,** 159
Caird Coast is a stretch of the Antarctic continent off which Shackleton's ship *Endurance* was frozen in the ice.
Picture: **2,** 377
Cairn is the name given to a mortarless tower or heap of stones as set up over a grave or battlefield.
Picture: **3,** 126
Cairngorms. A group of the Grampian Mountains. Cairngorm is a single peak upwards of 4,000 ft. in height. Cairngorm stones are found in these hills and used in jewellery.
Cairns is a port of Queensland, Australia, from which sugar is shipped, **3,** 226
Pictorial Map: **3,** 243
Cairn Terrier. A breed of active, small dogs related to the Scottish terriers, **8,** 315. See *Dogs as Pets.*
Cairo, on the River Nile, is the capital of Egypt, founded in A.D. 641, near the site of ancient Memphis. It is a city of exceptional buildings and its inhabitants include representatives of many nations, **4,** 194 *et seq.*
—the Allied war leaders met here, **2,** 253
—visited by Ibn Batuta, the fourteenth century traveller, **2,** 271
Pictures Two Mosques of Cairo, **4,** 194
Old Houses near Cairo's Zoucila Gate, **4,** 196
The "Gulli-Gulli" Man, **4,** 197
Caisson. A structure sunk in the ground as part of the foundation of a building or to support the pier of a bridge. It may be circular or square-cornered, **7,** 329
Caithness is a county of North Scotland. It is very mountainous and has many lochs. Wick is its principal town.
Caius Marcius. A nobleman of ancient Rome who defeated the Volscians and became Coriolanus, **2,** 55
Cake Urchin. Name of the flat-shaped sea urchin.
Calabar is a large district of West Africa, on the Guinea Coast.
Calabash. The shell of a fruit like a melon which is used as a receptacle for liquids. There is also a calabash tree.
Picture **1,** 312
Calais is a town and seaport of Northern France. A channel ferry service is maintained between Dover and Calais.
captured by King Edward III, **2,** 125, 404
—captured by the French, **2,** 144, 406
Calcium is a hard, white metallic element (symbol Ca). Calcium, combined with carbon and oxygen occurs as chalk, limestone and marble.
Calcutta. The largest city in India. It stands on the River Hugli, in the province of West Bengal of the Dominion of India. It has a population of about three millions, **3,** 323, 345 *et seq*
the first settlement of the East India Company, **3,** 311
Pictures. The Victoria Memorial, **3,** 345
A Street in Calcutta, **3,** 347
A Temple of the Jains, **3,** 349
Caldecott, Randolph (1846–86). A bank clerk who turned to art and became famous as an illustrator. Best known works are his coloured books for children.
Calder. A river of Yorkshire and Lancashire. It flows into the River Aire.
Calder, Sir Robert (1745–1818). A noted British admiral of his day, **2,** 198
Calderon, Philip H. (1833–98). Born in France of Spanish parents, he became a British painter and became Keeper of the Royal Academy 1887.
Picture: The Burial of John Hampden, **2,** 164
Caledonia was the name given in ancient times to that part of Scotland north of the Rivers Forth and Clyde.
Caledonian Canal, about 60 miles in length, runs through Inverness-shire and Argyllshire and links up many lochs. It connects Fort William and Inverness, **3,** 128
Caledonian Route is the name given to the main railway line from Carlisle up the Annan Valley and down the valley of the Clyde to Glasgow and Edinburgh, **3,** 112
Calendar is the term used for the systematic division of the year into months, weeks and days. The term is also used for lists of observances, or dates of events, as for instance church, university, legal and racing calendars. Quite early in the history of civilisation a calendar was devised. The Julian, or Old Style, calendar was formulated by Julius Cæsar. It was longer than the solar year by 11 mins. 4 secs., and eventually the Gregorian calendar, devised by Pope Gregory in 1582, was adopted by various countries though it was not until 1752 that it was adopted in Great Britain
Questions and Answers on the Calendar, **9,** 301, 302
Pictures: Time in Different Cities throughout the World, **9,** 310, 311
Calendered is a term applied to paper. A calendered sheet is one that has been made smooth and shiny by being passed through hot rollers
Pictures: **6,** 331, 332
Calendula. A very popular hardy annual sometimes known as the Pot Marigold
Calcy, Sir George (1773–1857). An early experimenter in aviation, **5,** 184
Calf of Man is the name of a small island to the south of the Isle of Man.
Calgary is the centre of the stock-raising and agricultural region of Southern Alberta, Canada, **3,** 180
Calibre is the diameter of the bore of a gun. An 8 in. gun is one having a calibre of 8 in.
Calico is so named after Calicut, a seaport on the west coast of India, from which it was first imported, **9,** 358
Calico Bush. Name given to the shrub Kalmia
Calicut is a seaport of the south-western peninsula of India. It gave its name to the cotton fabric calico. It was visited by the fourteenth century traveller Ibn Batuta and by Vasco da Gama, **2,** 272, 291
California is the second largest of the States of the U.S.A. It is rich in minerals and is famous for its fruit and agricultural crops of all kinds. San Francisco is one of its largest towns, though Sacramento is the capital, **4,** 273
Pictorial Map **4,** 290
Californian Big Tree. Name given to the *Wellingtonia* (*q.v.*).
Californian Poppy. Name often given to the hardy annual *Eschscholtzia* (*q.v.*).
Californian Valley lies between the Sierra and the Pacific coast in the U.S.A. It is a famous fruit growing region, **4,** 274
Picture: **4,** 292
Caligula (12–41). He became Roman

Emperor in 37, but was so cruel that the Romans rose and slew him.

Calipers. An instrument, similar in shape to compasses, with two legs or jaws for measuring the inside or outside dimensions of cylinders or circular objects. (*p.h.*)

Callander is a town of Perthshire. It is adjacent to the Trossachs and one of the gateways to the Scottish Highlands, 3, 124

Callao, on the Pacific, is a port of Peru, within a few miles of Lima, the capital, 4, 326, 336
Picture: 4, 331

Calling Hare. Name given to an Asiatic tailless hare which makes a birdlike noise as it feeds.

Callisto is the name given by astronomers to one of the four satellites of the planet Jupiter discovered by Galileo, 8, 151

Callus is the name given to new bone formed between and around the fractured ends of a broken bone, uniting the separated portions.

Calne is an ancient town of Wiltshire, famous for its bacon products.

Calorimeter. A device for measuring the heat given out by a given weight of a substance when burned, or needed to raise its heat by a certain amount.

Calpurnia. Wife of Julius Cæsar. It was she who dreamed about the fateful Ides of March, 2, 77

Calvados is the name of a district of Normandy, France. It is noted for its fruit and farm produce. The principal city is Caen.

Calves' Foot. Another name for *Cuckoo-Pint* (*q.v.*).

Calvin, John (1509–64). Originally a French priest, he settled in Basle and established a college of pastors. Spent his life in the cause of Protestantism, 4, 16
Picture: Where Calvin Preached, 4, 56

Calypso. This is the name given to a special kind of song sung in the West Indies, in particular on the island of Trinidad. The songs are usually about day to day events in Trinidad and in the world. The people who sing them are called calypso singers and often give themselves fanciful names, 3, 398

Calyx. The outer covering of a flower, its use being to protect the bud. Sepals are parts of the calyx, 1, 291, 292, 294, 296

Cam is the name of a Cambridgeshire river which joins the Ouse. It flows through the city of Cambridge.

Camaguey is one of the chief airports of Cuba, 4, 307

Camargue, La. The name of a region of the Rhone delta in France where cattle-rearing is the chief occupation. The French cowboys are called *gardiens de la Camargue*, 4, 148

Cambalac was the name by which Peiping (Pekin) was known in the time of Marco Polo, 2, 269

Camber is the name given to the sideways curve from the centre to the sides of a road, 5, 42

Camberley is a town of Surrey. It has a military college.

Cambium is a term used in botany for the sticky fluid found between the wood of certain trees and the bark.

Cambodia is a state of Indo-China. Its chief products are rice, pepper, and cattle. The chief town is Phnom-Penh, 4, 212
Pictures: 4, 213

Camborne. A market town of Cornwall. One of the centres of the mining and engineering industries, 3, 44
—Richard Trevithick invented a steam engine here, 3, 48

Cambrai is a town of the Nord Department of France, famous for its linen fabrics. It was the centre of heavy fighting in the war of 1914–18, 2, 239

Cambridge is one of our most famous university towns, but did not become a city until March, 1951. In the Middle Ages it was a vast distributing centre. Its history as a University dates back to the twelfth century. There are now some twenty colleges; names and dates of foundation are: Peterhouse (1284); Clare (1326); Pembroke (1347); Gonville and Caius (1348); Trinity Hall (1350); Corpus Christi (1352); King's (1441); Queens' (1448); St Catharine's (1473); Jesus (1496); Christ's (1505); St. John's (1511); Magdalene (1542); Trinity (1546); Emmanuel (1584); Sidney Sussex (1596); Downing (1800); Girton (1869); Newnham (1871); Selwyn (1882), 3, 68
Pictures: King's College Chapel, 3, 67
St. John's College, 3, 67
Grounds of King's College and Clare College, 3, 67
At Trinity College, 3, 68

Cambridge, Massachusetts, is the home of one of the most famous universities in the U S A. This is Harvard University which was founded in 1636.
Picture: 4, 281

Cambridge is a town of North Island, New Zealand. Not far away is the Karapiro Dam on the Waikato River.
Picture: 3, 266

Cambridgeshire is one of our inland counties largely devoted to farming. It includes the Fens, though the Isle of Ely is administered as a county by itself. The county town is Cambridge, 3, 68

Cambuslang, which manufactures steel, is a district of Glasgow, Scotland.

Camden is a town of New Jersey, U.S.A. It is noted for its soup and vegetable canneries and is linked to Philadelphia, Pennsylvania, by the Delaware Suspension Bridge across the Delaware River.

Cam, Diego. A famous Portuguese navigator. He found the mouth of the Congo River in 1484, 2, 286

Camel is a river of Cornwall. It enters the sea at Padstow Bay, 3, 50

Camel. The Arabian Camel, with a single hump, is found in North Africa. The Bactrian Camel, having two humps, comes from parts of Asia, 1, 74 *et seq.*. (*p.h.*)
—horses dislike the smell of camels, 2, 4
—difference between camel and dromedary, 9, 363
Pictures: Bactrian Camel and Calf, 1, 75
Camels at the Water Hole, 1, 75
Camel and Baby, 1, 76
Camels on a Desert Trek, 1, 77
Photo-tone Supplement: Transport in Many Lands, 6, *between* 304 and 305

Camel's Hump. This is made up of fat which the animal can use for bodily sustenance during long journeys, 1, 76

Camembert is a soft or cream cheese as made in France and Switzerland.

Cameo is an Italian word. It means a small delicate carving done in a stone having a light and a dark layer. The object is cut out in the light layer, the dark layer being exposed to form the background.

Camera. A light-tight box or chamber used for taking photographs. The only light allowed to enter comes through a lens in the front and is focussed on to a plate or film at the back,
See *Making the Most of Your Camera*, 8, 259 *et seq.*

Cameron, Lieut. He led a relief expedition in search of Dr. Livingstone, 2, 338

Cameron, Sir David Young (born 1865). A Royal Scottish Academician and also an R.A., his paintings are well known, 7, 110
Picture: 7, 116

Cameroons is the name of an area of West Africa lying south-east of Nigeria. It was formerly a German colony and is now administered partly by Britain and partly by France under trusteeship. The French part is much the greater, 4, 18, 385

Camm, Sydney (born 1893). Famous designer of aeroplanes. Among other models, he has been responsible for the Hurricane, the Typhoon and the Tempest built by Hawker Aircraft.

Camomile. A plant growing in fields and waste places. It bears daisy-like flowers which it turns down at the approach of rain so that it is regarded as a weather plant. *Also spelt* Chamomile.
—in the Argentine, 1, 338
Pictures: 1, 340
Colour Plate. 1, *between* 304 and 305 (Plate 3).

Camouflage. A word that means "hiding." In warfare it is the art of disguising military works, guns, ships, etc., by various devices. Among birds and animals camouflage is used to hide the creatures themselves, their nests or their eggs from being seen by possible enemies, 1, 170

Campaign. A series of military operations in a war. We speak of the Normandy campaign or the campaign in Italy.

Campana, or Bell Mountain, is a peak of the Andes, in South America, 2, 346

Campania. A district of Italy largely mountainous, where Hannibal fought Fabius, 2, 68

Campania was the first of a long series of "ocean greyhounds" designed to keep the voyage across the Atlantic to New York within the compass of a week. She was launched in 1893, 5, 254

Campanile is the name given to a tower containing a peal of bells. Such towers are usually a distance away from the church to which they belong.

The Leaning Tower of Pisa is a campanile and there is another famous campanile in St. Mark's Square at Venice.
Picture: **4**, 146
Colour Plate: St. Mark's Cathedral and Campanile, **4**, *facing* 61

Campanula. A large family of perennial plants, the flowers of which are bell-shaped. Often known as the Bell-flower, **8**, 278

Campbell, Captain Sir Malcolm (1885-1949). Famous racing motorist who established many speed records. He also made several motor-boat records in his speed-boat *Bluebird*, **5**, 176, 267
Pictures: A Car that made History, **5**, 170
An Historic Motor-boat, **5**, 270

Campbell, Sir Colin (Lord Clyde) (1792-1863). Son of a carpenter, he fought in the Peninsular War and did brilliant service in India. In the Crimea he commanded the Highland Brigade and afterwards stamped out the Indian Mutiny.

Campbeltown is the principal town of the Mull of Kintyre, Argyllshire, Scotland.

Camphor. Produced from a tree of the laurel family largely grown in the East. Camphor is much used in medicine.
Picture: **1**, 314

Campion Name of a group of plants belonging to the Silene family.
Colour Plate: (Bladder campion and red campion), **1**, *between* 304 and 305 (Plate 2).

Campsie Fells is the name of a range of hills in Stirlingshire, Scotland, **3**, 115

Canaan is the name given to a district of Palestine to the west of the River Jordan.

Canada is a Dominion of the Commonwealth of Nations and occupies more than half the North American continent. The Dominion has a population of nearly 12 million and consists of ten provinces: Alberta, British Columbia, Manitoba, New Brunswick, Nova Scotia, Ontario, Prince Edward Island, Saskatchewan, and Labrador and Newfoundland. In addition there are the North-west Territories, divided into three administrative Districts — Mackenzie, Keewatin, and Franklin, and the Yukon Territory. Ottawa, in Ontario Province, is the Dominion capital. Canada has remarkable resources and produces large quantities of wheat, timber and wood pulp. Her fruit farms, fur farms, and fisheries are important, as are her mineral and oil resources. The Dominion has rich supplies of water power. See *The Dominion of Canada*, **3**, 155 *et seq.*
—the British North American Act (1867), **2**, 220
—visited by King George VI, **2**, 244
—Newfoundland enters the Dominion, **2**, 416
—products of Canada, **4**, 385
Pictures: Timber starts its Journey to the Mills, **4**, 380
British Columbian Salmon Harvest, **4**, 381
Sorting Salmon at a Canadian Cannery, **4**, 382
Newsprint from Canada, **4**, 383
Product of Canadian Prairies, **4**, 384
Pictorial Map, **10**, 64 and 65
Photo-tone Supplement: The Dominion of Canada, **3**, *between* 160 and 161
Colour Plates: In Canada's Greatest National Park, **3**, *facing* 196
The Spiral Tunnels on the Canadian Pacific Railway, **3**, *facing* 197

Canada House, in Trafalgar Square, London, is the headquarters in the Commonwealth capital of the Government of the Dominion of Canada.
Picture: **3**, 20

Canadian Constitutional Act (1791) divided English-speaking Upper Canada from French-speaking Lower Canada and gave each parliamentary institutions, **2**, 196

Canadian Fall, of Niagara, is 158 ft. high and 3,100 ft. in width. It is also known as the Horseshoe Fall, **3**, 192

Canadian Hemlock. An evergreen coniferous tree which grows to a height of about 80 ft. Much planted in Britain's new forests, **1**, 326; **3**, 167

Canadian Pacific Railway. One of the great trunk lines of the Dominion. It runs from Montreal to Vancouver and has many branches, **3**, 158
—it took ten years to find a way for the line through the Rocky Mountains, **5**, 128
Colour Plate The Spiral Tunnels on the Canadian Pacific Railway, **3**, *facing* 197

Canadian Rockies is the term used for that part of the Rocky Mountains that run down the western side of Canada.
Pictures: A "Mountie" in the Wonderland of the Rockies, **3**, 159
Vermilion Lake, **3**, 159
Athabaska Glacier, **3**, 188
The Majestic Beauty of Banff, **3**, 193
Golf Course, Jasper Park Lodge, **3**, 191
Colour Plate In Canada's Greatest National Park, **3**, *facing* 196
Photo-tone Supplement The Dominion of Canada, **3**, *between* 160 and 161

Canadian Shield is the name given to the oldest geological region of the North American continent, the wide spread of old, hard rock around Hudson Bay which is now the chief mining area of Canada, **3**, 160

Canals are usually inland waterways constructed chiefly for the economical transport of heavy goods. They are equipped with locks. In the United Kingdom there are nearly 5,000 miles of canals. The main canal routes form an X with Mersey, Humber, Severn and Thames at the extremities of the four arms. In the Black Country and the Potteries we have more canals than anywhere else, **3**, 72

Canals (Ship) are deeper canals, large enough to take ocean-going ships, *e.g. Panama Canal, Suez Canal, Manchester Ship Canal* (*q.v.*)

Canal Zone is the name given to a ribbon of land on either side of the Panama Canal in Central America. It is controlled by the U.S.A.

Canary. A familiar cage bird. It belongs to the finch tribe. Specimens from the Canary Islands were brought to this country early in the sixteenth century, hence the name. It has been bred in captivity so long that it is quite happy in our homes, **8**, 313

Canary Creeper. Yellow-flowered climbing plant used in window boxes and on verandahs and balconies.

Canary Islands, belonging to Spain, lie off the coast of North-West Africa. They rank as two provinces of Spain. Las Palmas, on Grand Canary, is the principal town. The fruit and market garden produce from the Canaries is famous, **4**, 140
—Columbus called at the Canaries, **2**, 276

Canberra (*pron.* Can'bra) is the Federal capital of the Commonwealth of Australia. It is being built in the Federal Capital Territory in the south of New South Wales. Its Parliament House was opened in 1927, **3**, 235; **9**, 313
Pictures: **3**, 199; **9**, 315
Pictorial Map **3**, 243

Cancer, the Crab. One of the Signs of the Zodiac.

Candia. See *Heraklion.*

Candidate. One who applies for a certain post or sits for an examination or test of his abilities. In Rome, men seeking election to office went about clothed in a white toga or cloak.

Candle. A rod or cylinder made of wax, tallow or other fatty substance enclosing a wick of cotton or flax, and used to give artificial light. Until the nineteenth century candles were the main source of indoor illumination. To hold the candles, *candlesticks* were made in great variety, some of them holding several candles and so giving quite a fair light. (*p.h.*)

Candytuft. A hardy annual which flowers quickly after sowing. Family name Iberis, **8**, 278
Picture. **8**, 272

Canea is the seaport capital of the Greek island of Crete. It was severely damaged during the Second World War.
Picture: **4**, 160

Cane Basket Weaving. See *Basket Weaving in Cane.*

Canes Venatici (the Hunting Dogs) is the name of a constellation or group of stars.
Picture. **8**, 170

Canine. Belonging to dogs or to the dog family. Human beings have two teeth in each jaw called canine teeth, because their positions correspond to those of the long fangs of a dog, with which it tears its food.

Canis Major (the Large Dog), one of the constellations or groups of stars, **8**, 174

Cannæ. A village of Italy.
—the Battle of Cannæ. Fought between the Romans and Carthaginians, by which the latter became masters of nearly all Italy, **2**, 69
Picture: **2**, 70

Cannanore is a seaport of Madras, India. It was visited by Vasco da Gama, **2**, 291

Cannes is one of the famous holiday resorts of the French Riviera, **4**, 148

Cannibalism is the custom among the

FROM SEA TO SEA



Canada's borders enclose a huge territory, its total area of more than 3½ million square miles being roughly equal to the whole of Europe. Halifax on the Atlantic coast is nearer to Antwerp than it is to Vancouver on the Pacific coast. From east to west the boundary with the U.S.A. is close on 4,000 miles long, while from north to south it is nearly 3,000 miles, with climate varying from the polar regions to that of Mediterranean latitudes. It is the southern quarter of Canada which is at present fairly well populated. Approximately 50 per cent. of Canadians are of British stock and over 30 per cent. of French descent.

ACROSS THE PROVINCES OF CANADA



Specially drawn for this work.

The St. Lawrence Lowlands, with the river draining the five big Lakes, are the heart of *Canada* (see p 63), and more than half of Canada's people make their homes in this region of fertile farms and orchards, of thriving industries and great commercial centres. Montreal and Toronto, the two largest cities, Ottawa the capital, Quebec and many other cities are within this area. Extending westward are the broad meadow lands of the Great Central Plain, and beyond this the Canadian Rockies. This western mountain system extends over most of British Columbia to the Pacific, where Vancouver Island and Queen Charlotte Islands lie.

wildest and most uncivilised savages of eating the flesh of human beings. It is almost unheard of now, except among certain tribes living in the heart of Africa.

Canning, George (1770–1827). A great statesman and outstanding orator, he became Prime Minister in 1827 but died a few months later.

Cannock is an industrial and coal-mining town of Staffordshire.

Cannock Chase. A piece of moorland in Staffordshire having rich coal deposits, **3**, 71

Cano, Juan Sebastian del (1460–1526). Spanish navigator who took command of Magellan's ship, the *Vittorio*, when his great leader was killed in the Philippine Islands. After a three years voyage del Cano reached Seville in September 1522, having sailed 40,000 miles round the world, the first man to accomplish this. Drake was the second sailor to circumnavigate the world nearly sixty years later, **8**, 27

Cañon is the Spanish spelling of the word *Canyon* (*q.v.*).

Canopy. A covering over a throne, seat, or bed used to protect the head of the person under it. Babies have canopies over their cots and over their perambulators in summer.

Canossa. A town of northern Italy where Henry IV, Holy Roman Emperor, did penance in 1077, **4**, 72

Cantab. means belonging to the University of Cambridge or associated with that University.

Cantabrian Mountains is a chain of heights in north-western Spain famous for its iron ore, **4**, 136

Cantata. The name of a vocal piece of music consisting usually of solos and choruses, on either a sacred or secular subject. The great musician Bach wrote many sacred cantatas.

Canterbury stands on the Kentish Stour. It is the place where Christianity was first established in England. The building of the exquisite cathedral began in 597, **3**, 33, 34; **7**, 298
Pictures: In Canterbury Cathedral, **3**, 37
Tomb of the Black Prince, **7**, 305
Photo-tone Supplement: Canterbury Cathedral, **2**, *between* 128 and 129

Canterbury Bell. Popular biennial plant of the Campanula family.

Canterbury Plains, to be found on the east side in the centre of South Island, New Zealand, are famous for the lamb and mutton produced upon them, **3**, 256, 258

Canterbury Tales. Written by Geoffrey Chaucer (*q.v.*) who began them about the year 1387. Most of them are in verse, **2**, 134; **7**, 128
Pictures: **7**, 126, 127, 128
Colour Plate: **7**, *facing* 124

Cantilever. A projecting beam, girder or bracket fixed at one end only. A spring-board off which people dive is a simple example; and the beams supporting a balcony are another.

Cantilever Bridges are constructed where specially heavy weights have to be carried, one cantilever balancing another. Quebec, the Forth and the Howrah Bridge at Calcutta are good examples, **5**, 49
Pictures. Quebec Bridge across the St. Lawrence, **5**, 43
A Cantilever Bridge, **5**, 45
Photo-tone Supplement: Bridges Big and Little, **5**, *between* 64 and 65

Canton is the capital of the southern Chinese province of Kwangtung and an important trading centre. It stands on the Canton River, **2**, 321; **4**, 243
Picture: **4**, 246

Cantuar means of Canterbury.

Canute (994–1035). A Dane who became King of England.
—the triumph of the Danes, **2**, 90 *et seq.*, 404
Pictures: Convoying Ships through a Canal, **2**, 90
He reproves his courtiers as the tide comes in, **2**, 92

Canvey Island is a holiday resort and residential centre of Essex, at the mouth of the River Thames.

Canyon. A deep defile or ravine running through mountains. There are many canyons in U.S.A. and Mexico. Among the best-known are the Grand Canyon of Colorado. See *Grand Canyon.*

Capacity means the power of holding or receiving; ability. A pint measure is a measure of capacity. It holds a certain bulk of water when filled up. The gallon and bushel are other capacity measures in common use.

Cap de la Hague is a Cape on the north coast of France off which lie the Channel Islands, **3**, 52

Cape Adare is a promontory of Victoria Land in the Antarctic, **2**, 366

Cape Bon. The north-eastern promontory of Tunisia which projects into the Mediterranean towards Sicily. The Cape Bon peninsula is a fruit-growing region, **4**, 166

Cape Clear is the south-western point of Ireland. Four and a half miles off the cape is the Fastnet Rock Lighthouse.
Picture: **3**, 153

Cape Cod is a peninsula on the coast-line of Massachusetts, U.S.A.

Cape Colony was the name formerly given to what is now the Cape Province of the Union of South Africa, **3**, 276

Cape Evans is a promontory of Ross Island in the Antarctic.
Photo-tone Supplement: From Spray Ridges to Crystal Fairyland, **2**, *between* 368 and 369

Cape Gooseberry. A popular name for Physalis, so-called because of the brightly-coloured fruit bladder.

Cape Hatteras. See *Hatteras.*

Cape Horn is the most southerly point of South America, **2**, 281

Cape Hunting Dog. See *Lycaon.*

Cape Jumping Hare. An animal of the jerboa type found in South Africa.

Capel Curig is a small town of North Wales forming a good touring centre, **3**, 106

Cape Nordkyn, in Lapland, is the most northerly point on the mainland of Europe; Cape Marroqui the most southerly point, and Cape da Roca, in Portugal, the most westerly, **9**, 314

Cape of Good Hope. Name given to the southern tip of Africa by King John II of Portugal, **2**, 287; **3**, 275
—the colony later founded by the Dutch there was acquired by Britain during the Napoleonic War, **2**, 208
Picture: **3**, 291

Cape of Storms was the name given to the Cape of Good Hope by Diaz the navigator, **2**, 287; **3**, 275

Cape of Torments, or Cabo Tormentosa, was the name given by an early voyager to the Cape of Good Hope, **3**, 275

Cape Prince of Wales, overlooking the Bering Strait, is the most westerly point of North America, **2**, 314

Cape Province, formerly Cape Colony, is a province of the Union of South Africa occupying the southernmost portion of the African continent. It is officially known as the Province of the Cape of Good Hope and has its origins in Dutch colonisation in 1652. Cape Town is the provincial capital, **3**, 275 *et seq.*
Pictures: Cape Town and Table Mountain from the Air, **3**, 276
Cape Town's Centre of Learning, **3**, 277
The Snake Park at Port Elizabeth, **3**, 280
Built in the Dutch Style, **3**, 281
Kimberley's Diamond Mines, **3**, 282
Houses of Parliament, Cape Town, **3**, 285
Scenes in a Native College, **3**, 287
Scenic Beauties of the Union, **3**, 291
On the Line from Mafeking, **3**, 293
'Neath Africa's Azure Skies, **3**, 297
Photo-tone Supplement: The Union of South Africa, **3**, *between* 304 and 305

Capercailzie. A bird of little less size than that of the turkey; member of the grouse family. It is rare in Great Britain, but is sometimes seen in the Scottish Highlands.

Cape St. Vincent is a promontory of south-western Portugal. It is crowned by a lighthouse, **4**, 137

Cape San Roque is a great promontory of South America and is in Brazil, **4**, 311

Cape Sheridan is a promontory of Grant Land, which is part of Ellesmere Island, off the extreme north of Canada, **2**, 358

Cape Spencer is a promontory of the territory of Alaska in North America, **4**, 294

Cape to Cairo Railway. This was a dream of the Empire builder Cecil Rhodes. The completed line would be about 6,000 miles in length. It now runs from Cape Town to Northern Rhodesia and beyond and southwards from Cairo, **3**, 281, 286

Cape Town is the capital of Cape Province in the Union of South Africa and the site of the Houses of Parliament. It is situated on Table Bay and is a great commercial centre, **2**, 259; **3**, 276
Pictures: Cape Town and Table Mountain from the Air, **3**, 276
Cape Town's Centre of Learning, **3**, 277
Parliament Houses of the Union, **3**, 285
Photo-tone Supplement: The Union of South Africa, **3**, *between* 304 and 305

Capetown Castle, one of the largest liners of the Union-Castle Company, was built in 1938 and equipped with

luxurious accommodation. She is 27,000 tons gross.
Picture: **5**, 255

Cape Town University stands in the Groote Schuur Estate where Cecil Rhodes always wished it to be. It has over 200 teachers and an average of more than 1,800 students.
Picture: **3**, 277

Cape Verde. The most westerly point of the African continent, **2**, 289, 342; **3**, 379

Cape Verde Islands, belonging to Portugal, are in the Atlantic to the west of Cape Verde. They were visited by Charles Darwin the naturalist, **2**, 342

Capillaries is the name given to the hair-like blood vessels in our bodies, **8**, 214
Picture: **8**, 213

Capital, in architecture, is the head or upper part of a column or pillar. It is in most cases decorated, and in some styles highly ornamented.

Capitani reggenti. This is the name given to the two regents who are elected to rule the small state of San Marino. They hold office for six months and rule with the aid of a council, **4**, 172
Picture: **4**, 169

Capitol. (1) A strong fortress of ancient Rome, **2**, 58
—how geese saved the Capitol, **2**, 60
(2) An imposing building in Washington, the capital of the U.S.A., where Senate and the House of Representatives sit.
Photo-tone Supplement: United States of America, **4**, *between* 272 and 273

Cap Martin is a well-known resort in the French Alps.

Capri. An island in the Gulf of Naples, Italy. It has an excellent climate and is a favourite resort for visitors.

Capricornus, the Goat. One of the Signs of the Zodiac.

Caproni-Campini. A well-known Italian jet-propelled aeroplane, **5**, 223

Capsicum is a garden plant bearing ornamental fruits, some of them bright red in colour.

Capstan. A kind of winch, with a drum turning on an upright axis. The old type of ship's capstan, used for weighing anchor or hauling in a mooring, had holes round the top into which bars could be stuck spokewise for a large number of men to push against.
Most capstans are now worked by steam or electricity.

Capsule. A small envelope or cover. The seeds of many plants are enclosed in seed-capsules, which open when the seed is ripe. Bottles are sealed with capsules of lead or parchment. Some medicines are enclosed in capsules of gelatine that dissolve when they are swallowed.

Captain Cook Dock is the new graving dock at Sydney, New South Wales, Australia. It was opened by the Duke of Gloucester in 1945, **3**, 232

Captain Moonlight, or Moonlite, was an Australian bushranger. Previously he had been a soldier, lay reader, public lecturer and forger, **3**, 205

Captain Thunderbolt was a name used by Frederick Ward, an Australian bushranger, **3**, 205

Capuchin. A small, gentle monkey found in South America.

Capybara. The largest member of the rodent family, 4 ft. in length. Found in South America. It lives near water.

Carabus Beetle. A brightly coloured insect with long legs. It is usually golden-green in hue.

Caracal. A savage wild cat. Found in India and Arabia, **1**, 56
Picture: **1**, 54

Caracas is the capital of Venezuela. It was founded in 1567 and is an industrial centre, **4**, 330

Caractacus (also known as Caradoc). A British hero, he is honoured for his fierce resistance to the Romans, A.D. 48–51; **2**, 80, 403
Picture: **2**, 80

Carat is a measure used for expressing the weight of precious stones and the fineness or purity of gold.
Pure gold is 24 carat gold, **6**, 86

Caravan. A company of travellers who join together in many parts of Africa and Asia so that they may travel in greater security. A caravan is also a large enclosed carriage such as those used by gipsies and by holiday-makers.
Colour Plate: A Desert Caravan Starting at Dawn, **4**, *facing* 204

Caravanserai is the name given in the East to a large inn with an extensive yard in which those travelling by caravan can place their animals and vehicles, **3**, 337

Carbohydrates is a word referring to certain foods which contain starch and sugar. They produce both energy and heat, **8**, 220

Carbolic Acid, which can seriously burn one's skin, is used as a disinfectant. It is obtained from tar, **6**, 19

Carbonate is a compound of carbon, oxygen and some other element. Two of the best known are chalk, which is carbonate of calcium, and washing soda or carbonate of soda.

Carbon Dioxide is the name given to exhaust gases from the human frame, **8**, 218

Carboniferous. Term applied to land that produces coal. The time when coal was being formed in the ground is the Carboniferous Period.
Picture: **1**, 3

Carborundum is an extremely hard, black carbide of silicon, made by heating coke, sand, salt and sawdust together in an electric furnace. It is, after treatment, moulded into wheels for grinding metal.

Carburettor. Name of a chamber in which greater heating value is given to water-gas as made in a gasworks, **6**, 269
—an appliance fitted to a motor engine. It supplies a mixture of air and petrol vapour to the engine and is controlled by a float which limits the supply of petrol, **5**, 169

Carcassonne, in the south of France, stands today as it was in the Middle Ages. It has fortified gates and many towers, **4**, 16
Pictures: **4**, 17; **10**, 135

Carcoar is an iron ore centre near Lithgow in New South Wales, Australia, **3**, 238

Cardenas, General Lázaro. He was President of Mexico from 1934 until 1940 and played a major part in the land redistribution schemes of that country, **4**, 298

Cardiff, Glamorganshire, is situated on the Taff River. It has a university college and is a great coal port and manufacturing commercial centre with a vast system of docks, **3**, 72, 93 *et seq.*
Pictures: **3**, 95, 98

Cardigan, James Brudenell, Seventh Earl (1797–1868). A cavalry officer, he led the famous charge of the Light Brigade at Balaclava (1854).

Cardigan Bay faces the coast of Wales between the counties of Carnarvon and Pembroke. Its coast-line exceeds 120 miles and contains many well-known seaside resorts, **3**, 100
Picture: **3**, 105

Cardiganshire is a county of South Wales. Its surface is mountainous and it is noted for its sheep and wool. *Cardigan,* on the River Teifi, is the county town.

Cardinal Points on the compass are N., E., S. and W., *i.e.*, North, East, South and West.
Picture: **10**, 93

Carding Machine. An appliance used in cotton mills. Its wires act like combs and draw on cotton wool as it is drawn through, **6**, 338

Cardon is the name of a new oil centre on Paraguana Peninsula of Venezuela, **4**, 331

Cardoon is a vegetable, the blanched heart of the plant being used in stews and soups

Careenage, The. The name of the harbour of Bridgetown, the capital of Barbados.
Picture: **3**, 397

Cargoes. A Poem by John Masefield, **9**, 89

Caribbean Sea is found between the north of South America and the Greater Antilles Islands. It is the source of the Gulf Stream, **4**, 306

Caribou. An animal similar to the reindeer, found in Greenland and Canada, **3**, 166

Caricature. A picture or description of a person or thing which so exaggerates details as to be ridiculous. Politicians are favourite subjects for the caricaturist.

Carillon is the name given to a large assembly of bells. In the Low Countries particularly there are many belfries containing carillons.

Carisbrooke is a small town in the Isle of Wight, noted for its castle.

Carline Thistle. See *Thistles.*

Carlingford is a seaport and town of Louth, Eire. The name is also given to the lough on which the town stands.

Carlisle. The county town of Cumberland and a great railway junction. It has commercial interests and manufactures and is an important road centre, **3**, 81

Carlists were the supporters in Spain of Don Carlos and his successors who claimed the throne of that country, during the nineteenth century, **2**, 351

Carlow. One of the counties of Eire, in the Province of Leinster. The district is mainly interested in farming.
Carlow is the county town, on the River Barrow.

Carlsbad, which has mineral springs, is a health resort of Bohemia.

Carlyle, Thomas (1795–1881). Great Scottish essayist and historian. He was the author of *Sartor Resartus,* **2,** 221; **7,** 152

Carmarthenshire is a county of South Wales. Its surface is mountainous and it has many coal-mines. Its principal river is the Towy.
Carmarthen, on the River Towy, is the county town, **3,** 94

Carmel is the name given to a chain of mountain heights in Palestine.

Carnarvon. Town, seaport and the capital of Carnarvonshire. Carnarvon Castle was built by Edward I. Here Edward II was born, **2,** 112, 404; **3,** 200
Picture. **3,** 96

Carnarvonshire. A county of North Wales. It raises sheep and has mineral wealth. The heights of Snowdon come within this county.

Carnatic was the name given to a district of Southern India that is now part of Madras, **3,** 320

Carnedd Dafydd is a peak in North Wales more than 3,400 ft. high, **3,** 103

Carnedd Llewelyn. One of the mountain summits of North Wales, 3,484 ft. in height, **3,** 103

Carnedd Ugan. One of the mountain summits of North Wales, 3,476 ft. in height, **3,** 103

Carnegie, Andrew (1835–1919). Of humble birth, he made a great fortune from steel. Gave away more than 14 million pounds during his lifetime, mostly for the provision of free public libraries. After his death the Carnegie Trusts continued his benevolent works.

Carnegie Medal for the outstanding book of the year for children, **7,** 277

Carnethy is a peak of the Pentland Hills, Scotland, nearly 2,000 ft. in height.

Carnival means some gay festival, in which the general public takes part. Originally a carnival was a festival held in the last week before Lent.

Carnivore is the name given to a carnivorous animal, *i.e.,* to a creature that is mainly a flesh-eater, **1,** 64

Carnot, Sadi (1796–1832). A French scientist, whose teachings had mostly to do with energy, **7,** 362

Carnoustie. A seaside town and holiday resort of Angus, Scotland.

Carolina was in the seventeenth century a British colony in North America. It now forms two States of the U.S.A., *i.e.,* North Carolina and South Carolina (*q.v.*).

Caronia, the 34,000-ton Cunard-White Star Liner, was the largest ship to be built in the first few years after the war.
Pictures: **5,** 249, 261, 264–5

Carothers, Dr. An American chemist under whose leadership a number of researchers found the secret of the manufacture of nylon, **6,** 354

Carp. Name of a fresh-water fish, of which there are many species. It is said to live to a great age, **8,** 246
Special Colour Supplement: British Fresh Water Fishes, **8,** *between* 256 and 257 (Plate I).

Carp, Grey-Green. The family of wild fish from which goldfish are bred, **1,** 224

Carpathian Mountains form a great range passing through Czechoslovakia, Hungary and Rumania, **4,** 102

Carpel is the name given to one of the divisions of the pistil of a flower. Each carpel has a swollen part at the bottom, called an ovary, containing ovules. These, when fertilised by pollen descending through the stigma, or upper part, become seeds, **1,** 296

Carpentaria, Gulf of. This large gulf is found to the north of Australia. It was discovered in 1606 and is named after Pieter Carpenter, **3,** 200
Pictorial Map: **3,** 243

Carpenter, Pieter, was Governor of the Dutch East India Company in the seventeenth century. After him is named the Gulf of Carpentaria in the north of Australia, **3,** 200

Carpet. A textile fabric usually made from wool, though other materials are used at times, to form a thick covering for floors, etc. Carpets originated in ancient Egypt, but were not used generally in Britain until the sixteenth century. Brussels, Axminster, Wilton, Turkish, Indian, Persian, Chinese are well-known types.
Pictures: Indian Carpet-making, **3,** 331
Chinese Carpet Workers, **4,** 230
Making Wilton Carpets, **6,** 365, 366

Carrantuohill is the name of the loftiest peak in Macgillycuddy Reeks and the highest point in Ireland. The peak rises to 3,414 ft., **3,** 144

Carrara. A town of north-west Italy, standing in the coastal hills north of Leghorn. It has very famous marble quarries, **4,** 151

Carriacou is the most important of the Grenadine islands in the Windward group.

Carrick-a-Rede is a place on the coast of Antrim, Northern Ireland. A chasm between the rocks is here spanned by a rope bridge.

Carrickfergus. A seaport of County Antrim, Northern Ireland. It is situated on Belfast Lough.

Carrick-on-Shannon is the county town of Leitrim, Eire. Its interests are mainly agricultural.

Carrion means the decaying flesh of dead animals unfit for human food. Vultures and crows feed on carrion, which is sometimes used as bait in lobster pots.

Carrion Crow. A bird usually seen singly or in pairs, bluish-black in colour. As its name suggests, it feeds on small creatures or carrion.

Carroll, Lewis (1832–98). Pen-name of Charles L. Dodgson, student and tutor of Oxford; author of *Alice in Wonderland* and *Through the Looking Glass,* **7,** 220, 267, 271; **9,** 340
—at Gogarth Abbey, near Llandudno, **3,** 108
Pictures: Alice and the White Rabbit, The King and Queen of Hearts, **7,** 220
Who Stole the Tarts? **7,** 221

Carrot. A root vegetable, the cultivated varieties being among the most popular and nutritious of garden produce.
The wild carrot is a common wayside and meadow weed in Britain.

Carse of Gowrie. A famous Scottish stretch of most productive farmland along the Firth of Tay, **3,** 114

Carson is the capital of Nevada, one of the Western States of the U.S.A.

Cartagena. (1) A seaport of Colombia, South America. It has a hydroplane service with Bogota, the capital, **4,** 330. (2) A port of Spain.

Cartagena, Juan de, was one of Magellan's captains, **2,** 283

Cartago, the former capital of Costa Rica, is about ten miles from the present capital, San José. It is the centre of a rich agricultural district, **4,** 305

Carter Bar is one of the boundaries between England and Scotland in the Cheviot Hills.

Carthage. A famous city of the ancients on the coast of northern Africa believed once to have contained some 700,000 inhabitants. After its siege and burning by the legions of Rome it became a Roman colony, **2,** 63, 71, **4,** 132, 166; **9,** 20
—Size and population of Carthage, **2,** 74
—the Punic Wars against Rome, **2,** 402
Picture. The Catapult, **2,** 62

Cartier, Jacques (1491–1557) The French navigator who, in 1534, explored the St. Lawrence River, Canada, **2,** 294, **3,** 155
Pictures: In the Gulf of St. Lawrence, **2,** 294
Frozen in the Ice, **2,** 195
Photo-tone Supplement A Commercial Capital and its History, **3,** *between* 160 and 161

Cartilage is the smooth, glistening tissue with which the surface of our bones is covered where they move against one another.
Picture: **8,** 212

Cartwright, Edmund (1743–1823). An English clergyman who invented the power loom

Caruso, Enrico (1873–1921). The greatest of modern opera singers. He died in Naples.

Casablanca is a seaport and city of Morocco on the shores of the Atlantic Ocean. It was one of the meeting-places of Mr. Churchill and President Roosevelt during the Second World War, **2,** 253

Cascade Mountains is the name of a lofty range of North America. It runs into British Columbia through the States of Washington and Oregon.

Casein. A protein compound contained in milk; used in plastics, **6,** 367.

Cashel. A city of Tipperary, in Eire, with an archbishop (Roman Catholic) and a bishop (Protestant). It is famous for the Rock of Cashel on which are many historical ruins and was associated with the Kings of Munster, **3,** 154
Picture: **3,** 151

Cashmere Goat. An animal much valued, when domesticated, for its silky wool which is used in making shawls. It lives in Cashmere.

Casper is a town of Wyoming, U.S.A., an important oil centre.

Caspian Sea. An inland sea surrounded mainly by the Soviet Union, though bounded on the south by Iran (Persia). It is some 760 miles in length, **4**, 105, 203

Cassava is the meal or flour prepared from the roots of a shrub that grows in hot countries. From cassava comes tapioca, **4**, 316
Pictures: **1**, 350

Casserole. A fireproof earthenware or glass dish used for cooking.

Cassini, Giovanni Domenico (1625–1712). A famous Italian astronomer who in 1673 estimated that the sun was 87,000,000 miles from the earth. The modern figure is little different from this, *i.e.*, 92,900,000 miles, **8**, 115

Cassiopeia is the name of a star group or constellation.

Cassiterides, meaning Tin Islands, was a term used by Greek writers. It is thought to refer to Devon and Cornwall, or to the Scilly Islands.

Cassius. A soldier of Rome. He was one of the murderers of Julius Cæsar, **2**, 78

Cassivelaunus. A prince of Britain who led his soldiers valiantly in the invasion of this country by Julius Cæsar, **2**, 79

Cassowary. An ostrich-like bird found in Australia and New Guinea. It has a horny growth on its head
Photo-tone Supplement: Wild Life in Australasia, **1**, *between* 336 and 337

Caste is a term applied to the groups or classes into which, in India, Hindus are divided, **3**, 319

Castiglione, Count Balthasar was the intimate and lifelong friend of the artist Raphael, **7**, 21
Picture: **7**, 19

Castilian is the name given to a Spaniard from that part of Spain known as Castile. New Castile is a wide area around Madrid, the capital. North of this is Old Castile, running up to the Biscay coast at Santander, **4**, 135

Casting is a term used in a foundry where articles are made by casting or founding metals, **6**, 48, 70, 71
Pictures: Casting in Progress, To be Smoothed by Machine, **6**, 53
Making a Cylinder from Steel, **6**, 71

Casting the line is a part of the angler's art requiring care and skill, **8**, 254
Pictures: **8**, 252, 254

Casting Off is the removal of a piece of knitting from the needles, **8**, 400
Picture: **8**, 399

Casting On is a term used in knitting. It means the starting of an article that is being made, **8**, 396
Picture: **8**, 397

Castlebar is noted for its linen goods. It is the county town of Mayo, Eire.

Castle Douglas is a town of Kirkcudbrightshire, Scotland.

Castleford. A town of the West Riding of Yorkshire. It makes glass, chemicals and pottery, and is a colliery centre.

Castlemaine is a town in the state of Victoria, Australia, and one of the goldmining centres discovered in the last century. It has a population of nearly 6,000, **3**, 205

Castle of Mey. See *Barrogill Castle*

Castle of the Seven Towers is an old fortress at Constantinople on the shores of the Bosporus, **4**, 164

Castlereagh (Robert Steward), Viscount (1769–1822). Famous British statesman, he worked for the union of Ireland with Britain and consistently supported the Duke of Wellington in the House of Commons. He represented Britain at the Congress of Vienna, **2**, 208

Castle Rock is the name given to the old volcanic stump upon which Edinburgh Castle is built, **3**, 116

Castle Rushen is at Castletown on the Isle of Man and was once the seat of the Kings of Man, **3**, 92

Castleton. A town of Derbyshire where one may see the Peak Cavern and the Castle dealt with by Scott in *Peveril of the Peak.*

Castletown is on the Isle of Man and has an ancient castle called Castle Rushen, **3**, 92

Castor. A flying-boat of the British Overseas Airways.
Picture: **5**, 202

Castor and Pollux. Twin brothers who were heroes of Greek mythology. Castor was famed as a tamer of horses while Pollux was a fine boxer. They took part in the Argonauts' voyage and became the special protector of all voyagers. A temple was dedicated to them in Rome.

Castor Oil. This medicine is obtained from small brown beans that are imported from India, **1**, 334

Castries is a seaport and capital of the West Indian island of St. Lucia.

Cat. To this family of mammalian animals belong the lion, tiger, leopard, cheetah, puma, jaguar. See *The Great Cats of the Jungle*, **1**, 47 *et seq.*
Also *Cat, Domesticated.*

Cat and the Broom, The. A Poem by A. A. Kenny, **9**, 91

Cataclysm means a deluge, or a disaster caused by the forces of Nature. Terrible floods, earthquakes and volcanic eruptions are natural cataclysms.

Catalan. The name of a language spoken in Catalonia, *i.e.*, north-east Spain. The word is also applied to the people of that region, **4**, 135

Catalogue. A complete list made alphabetically or according to a definite plan. Most large stores issue a catalogue of the goods which they sell.

Catalonia is a region of north-east Spain peopled by Catalans who, besides speaking Spanish, have a language and culture of their own. Most of Spain's textile industry is in this part of the country. The chief town and virtual capital of Catalonia is the seaport of Barcelona, **4**, 135
Picture **4**, 134

Catalpa. A handsome tree, often reaching a height of 30 ft. and bearing at mid-summer white flowers spotted with purple. These flowers develop into seeds in the form of beans in long pods.

Catamaran is the name of a raft-like boat propelled by paddles and used in Ceylon and India.
Picture: **3**, 368

Catapult. A weapon of warfare used by the ancients to hurl stones at their enemies.
Pictures: The Catapult, by Sir Edward Poynter, **2**, 62

Cataract. A waterfall; a rushing mass of water. The cataracts of the Nile are rapids rather than waterfalls. The great Assouan Dam was built on the site of what was formerly known as the First Cataract, **5**, 80
Picture: **5**, 75

Cataract of Lodore. A Poem by Robert Southey, **3**, 88

Cataract Canyon is one of the deep defiles of the Colorado River, **2**, 353

Cat, Civet. See *Civet Cat.*

Cat, Domesticated. Although the lion, tiger and other creatures of the jungle belong to the cat family, the word is usually confined to the smaller, domesticated species. Ever since the days of the ancient Egyptians the cat has been a domestic pet and their general characteristics have not altered to any very great extent through the centuries. See *Tibby the Cat*, **1**, 56; also *The Cat as a Pet*, **8**, 313–5; **9**, 363
Pictures: A Family of Kittens, **1**, 57
Kitten in Strange Company, **1**, 59
Siamese Cat, **1**, 58
The Siamese Cat, **8**, 311
A Cat and Dog Life, **8**, 312
A Long-Haired Cat, **8**, 318

Caterpillar. The larva of a butterfly or moth. Caterpillars come from eggs and turn into pupæ or chrysalises, **1**, 248
– collecting caterpillars, **8**, 282
Picture: **1**, 250

Catesby, Robert (1573–1605) was a leading spirit in the Gunpowder Plot (*q.v.*). When the Plot was discovered, he fled to Holbeach House where he was killed by those sent to arrest him, **2**, 157
Picture: **2**, 157

Catfish. An Indian fish that can climb up walls.
Picture: **1**, 217

Catfish, Electric. See *Electric Catfish.*

Cathay was the name used in the Middle Ages by people of the west for China, **2**, 270

Cathedral of St. James, Montreal, is a reproduction on a smaller scale of St. Peter's, Rome, **3**, 184

Catherine of Aragon (1485–1536). The first wife of Henry VIII.

Catherine of Braganza (1638–1705). The unhappy consort of King Charles II, whom she married in 1662. Tangier was part of her dowry but was soon abandoned by England, **4**, 166

Catherine II. Empress of Russia from 1762 until 1796. Her reign was a brilliant period of Russian expansion, the Crimea, Lithuania, Odessa, and much of Poland being added to her empire. She was known as Catherine the Great, **4**, 106

Cathode Ray Tube. The name Cathode Ray was first used by Plucker in 1859 to describe the electrical discharge from the cathode (negative pole) when a high voltage electric current is passed through a glass tube from which practically all air has been withdrawn. Improved by later scientists, the cathode ray tube played an important part in the development of Television and Radar, **6**, 223–4–6

Picture: The Cathode Ray Tube, 6, 224

Catiline (108–62 B.C.). A political figure in the days of ancient Rome. He was the leader in conspiracies and was accused by Cicero in the Senate of plotting treason against the Republic.

Catkin. Sometimes known as lambs' tails, a form of flower, and usually the male blossoms from which pollen is shaken by the wind.
Nuts, poplars, willows and larch are among the trees that produce catkins.
See *Trees of Our Countryside*, 1, 395

Catmint. Name given to the pretty flowering plant Nepeta (*q.v.*).

Cato (234–149 B.C.). A Roman senator who worked for the downfall of Carthage, 2, 71
Picture: 2, 71

Cat's-Ear. Name of a wild plant growing to a height of 1½ ft. It bears bright yellow flowers which form seed heads; each seed having its parachute.

Catskill Aqueduct. It was constructed for supplying New York City with water and is the largest to be found, 6, 252

Catskills. Name of a range of mountains in the State of New York, U.S.A.

Catterick. A town of the North Riding of Yorkshire. It is a military centre.

Cattle in this country are made up of many breeds of which Highland, Ayrshire, Aberdeen-Angus, Herefords, Jersey and Guernsey, Shorthorns and Redpolls are examples, 6, 379
Picture: A Fine Herd of Jersey Cows, 6, 380

Cauca. (1) A department (province) of Colombia. Popayan is its chief town.
Picture: 4, 333
(2) A river of Colombia and a tributary of the River Magdalena.
Picture: 4, 334

Caucasus. Name of a range of mountains of the Soviet Union. They extend from the Black Sea to the Caspian. The highest peaks are Mount Elbruz (18,465 ft.) and Mount Kazbek (16,346 ft.), and since the Caucasus (which form one of the boundaries of the continent of Europe) are sometimes reckoned as being within Europe, these peaks are often called the highest in that continent, although this title is usually given to Mont Blanc in France, 4, 2

Cauldron. A large kettle or boiler of copper or other metal, especially one used for cooking out-of-doors. It is suspended from a support and hung over an open fire.

Caulk means to make (a joint) watertight or steamtight. A ship's deck is caulked by driving oakum (rope yarn) into the seams between the planks and covering it with resin or pitch.

Causeway means a raised pathway built over wet or marshy ground, such as Maud Heath's Causeway, near Chippenham, Wiltshire. Sometimes the name is given to a paved way, or a street.
Giant's Causeway (*q.v.*), off the coast of Northern Ireland, is a natural pathway stretching out to sea.

Caustic. Burning; corroding. Certain chemical substances, including caustic soda, caustic lime and caustic potash "burn" the skin if rubbed on it.

Cavaliers. The name popularly given to the supporters of the Stuart kings during the Civil War, 2, 161

Cavalier, The Laughing. World-famous picture painted by Frans Hals, 7, 48
Picture: 7, 43

Cavalry means soldiers mounted on horseback. Before the coming of motors and tanks cavalry as a branch of the fighting forces was of the first importance, but today their place is largely taken by mechanised troops such as those of the Royal Armoured Corps.

Cavan is a county of Eire interested mainly in agriculture. The name is also given to its county town.

Cave Dwellings often formed the homes of primitive man. They may have been natural caves or recesses in the ground made for the purpose, and there are some cave-dwellings in existence to this day, 7, 279

Cave Lion. A prehistoric animal.
Picture: 1, 33

Cavell, Edith Louisa (1865–1915). The English nurse who, after being tried by court martial, was shot by the Germans in Brussels during the war of 1914-18, 2, 237
Picture: 2, 237
—A mountain in the Jasper National Park of Canada has been named after her. See *Mount Edith Cavell.*

Cavendish, Henry (1731–1810). He weighed the earth and discovered the composition of water, 7, 358

Cavendish, Thomas (1555–92). British sailor who set out from Plymouth in June 1586 and sailing westward returned to Plymouth in Sept. 1588 having sailed round the world, the second Englishman to do so. He discovered the island of St. Helena. On a second attempt to circumnavigate the world he died and was buried at sea, 8, 27

Cave-Temples are eighth century places of worship carved out of the solid rock of a hillside at Ellora, India, 3, 324, 325
Picture: 3, 324

Caviare is the roe of the sturgeon fish and is considered a great delicacy, 4, 360

Cavour, Count Camillo Benso di (1810–61). One of the great figures in the struggle for Italian unity. He was Prime Minister of Piedmont and made this state strong and progressive. He worked constantly to drive the Austrians from Italy and unite its different parts into a single country, 4, 150

Cavy is another name for the guinea pig. These animals belong to the rodent group and are found in a wild state only in South American countries. They have no means of defence. How to keep them as pets, 8, 320
Picture: 8, 317

Cawnpore, on the River Ganges, is the largest city in the United Provinces of the Dominion of India. It is an important textile centre, and is associated with the unhappy days of the Indian Mutiny (1857), 3, 360
Picture: 3, 360

Caxton, William (1422–91). Son of a Kentish farmer, he was the first English printer, 2, 137
Picture: 2, 137

Cayenne. A port of French Guiana, once a notorious convict settlement, 4, 18

Cayman. Name of a reptile found in Central and South America. It is a relation of the alligators and crocodiles.

Caymans. A group of islands in the Caribbean Sea.

C.B. means Companion of (the Most Honourable Order of) the Bath.

C.B.E. means Companion of the Most Excellent Order of the British Empire.

C.C. means County Council, *i.e.*, L.C.C., London County Council.

Cedar of Lebanon. One of the three common varieties of cedar, the others being the Deodar and the Mount Atlas. They may reach a height of 100 ft., 1, 282, 416
Picture: 1, 328

Cedar Rapids is the name of a city of Iowa, U.S.A. Its interests are agricultural.

Cedilla is the name of a mark placed under a letter c to denote that it is pronounced with the sound of s, thus garçon (*French*).

Cedron is the name of a small tree which grows in Central America. It bears fruits the seeds of which cure snake-bite, 1, 334

Cee-Spring is the term used to describe a steel spring found usually at the back of a horse-drawn carriage. It is shaped like a letter C.

Ceiba, or cottonwood tree, is native to tropical and sub-tropical countries, and is noteworthy for the gigantic flat buttresses which support its lower trunk, 4, 307

Celandine. Name given to two plants belonging to different families: the Greater Celandine, related to the poppy, is a plant of the hedgerow and waste ground; the Lesser Celandine belongs to the buttercup or crowfoot family and is found on sunny banks, on pasture hedge banks, and on waste ground, 1, 306
Special Colour Supplement: British Wild Flowers, 1, *between* 304 and 305 (Plate 4)

Celebes is an island of Indonesia inhabited mainly by the Menadonese people. See *Indonesia.*

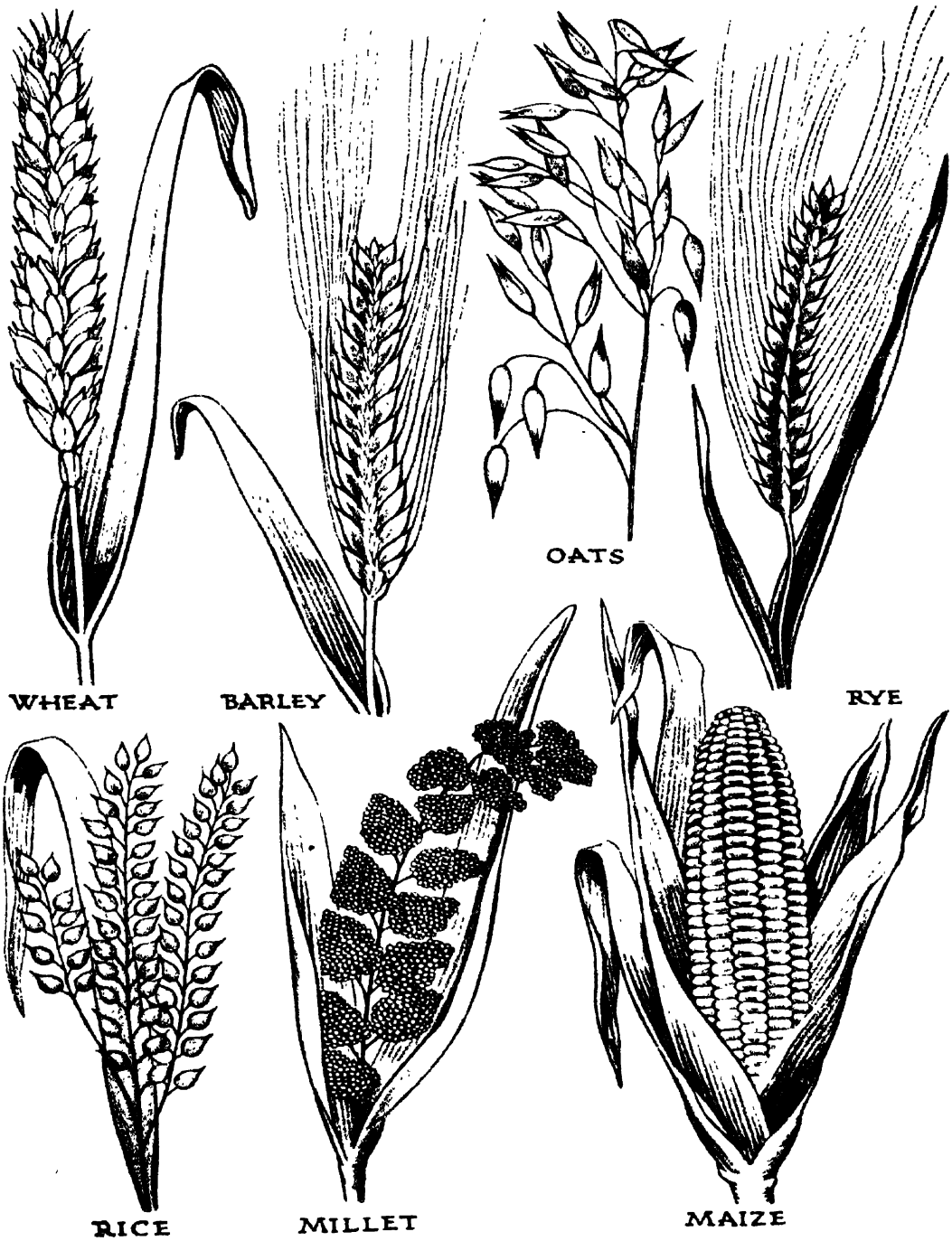
Celestial means something belonging to the heavens; heavenly. The stars are celestial bodies, for they are seen in the heavens.

Celestial Police. Name given to a group of astronomers who examined the skies nightly in search of small planets in the early part of the nineteenth century, 8, 146-7

Cellini, Benvenuto (1500–71). A famous Italian metal-worker and sculptor who lived a restless, exciting life. His autobiography telling of his adventures has become a classic.
A monument to him can be seen on The Ponte Vecchio in Florence.
Picture: 4, 140

'Cello (*pron.* Chello) is the general

GRASSES CULTIVATED FOR FOOD



Specially drawn for this work.

Cereals (see p. 72) have played a highly important part in the history of mankind from the days when the ancient Egyptians settled in the fertile Nile Valley. In the temperate lands, wheat, barley, oats and rye are the chief cereal crops, while rice, millet, maize and others not so well known grow best in warmer climates. All of these are used as food for men and animals, and even the straw they produce is highly useful for many purposes.

abbreviation of violoncello, the bass stringed instrument in an orchestra.

Cells is the name given to the parts of which all living things, animal and plant-life, are formed. Cells increase by dividing into two cells and this is how growth is made, **8**, 210
Pictures: A Muscle Cell, **8**, 209
Making New Cells, **8**, 210
Worn-out Skin Cells, **8**, 210
Cartilage Cells, **8**, 212

Celluloid is a substance produced by treating cotton or wool fibre with acids, mixing it with camphor, and kneading it in mills. It softens when heated and can easily be moulded into buttons, combs, handles and other articles.
Its discovery paved the way to modern plastics, **6**, 367

Cellulose is the fibrous part of plants, cotton-wool being almost pure cellulose. We use the cellulose of flax, jute and hemp for linen, sacking, canvas, ropes, etc.; and the cellulose of wood in the manufacture of paper and artificial silk.

Cellulose-Acetate Process, is one of the three main methods of making rayon, **6**, 347, 349

Celtic means something belonging or relating to the Celts. Celtic languages are still used in the Highlands of Scotland (Gaelic); Eire (Erse); Wales (Welsh) and Brittany, France.

Cemetery Plain is near Darwin in the Northern Territory of Australia. Its name comes from the curiously constructed anthills which rise upon the Plain to a height of 12 ft.
Picture: **3**, 223

Cenis is the name of a mountain on the frontiers of France and Italy. It is famous for its roadway or pass over the Alps and for the Mont Cenis railway tunnel, nearly eight miles in length, **4**, 13

Cenotaph is a word meaning "an empty tomb." The most famous Cenotaph, designed by the late Sir Edwin Lutyens, stands in Whitehall, London, to the memory of those who fell in the war of 1914-18. The dates "1939" and "1945" are also carved on it.
Picture: **3**, 9

Census means an official enquiry into the number and condition of the inhabitants of a country. The practice can be traced back to early times, but the first census in Britain was not taken until 1801. In the U.S.A. one was taken in 1790, and in Sweden in 1749, **9**, 319

Cent. means *centum*, a hundred.

Centaurea. Family name of the *Cornflower* (*q.v.*).

Centaury. A familiar wild plant bearing a flattened flower head, **1**, 304
—as a plant used in medicines, **1**, 333
Colour Plate: **1**, *between* 304 and 305 (Plate 3)

Centenary is the hundredth year after a birth or event.

Centigrade. Name of a type of thermometer. It shows freezing point at 0°. See *Thermometer.*

Centipedes are many-footed creatures found in gardens. They move rapidly and are in no way harmful to plants.

Central America is a comparatively narrow isthmus connecting N. and S. America. It includes Guatemala, Honduras, Salvador, Nicaragua, Costa Rica and Panama, as well as the colony of British Honduras. See *Mexico and Central America*, **4**, 297 *et seq.*

Central Highlands is the name given to the district of Scotland dominated by the Grampian Mountains, **3**, 128

Central Plain is the name used to describe the middle part of Ireland. The old layers of rock which once covered it were planed off by ancient ice. The old limestone floor is left, with isolated hills and mountains, **3**, 141

Centrifugal means tending or making to fly from the centre. If you let drops of water fall on to a spinning top, they are flung off by centrifugal force. If you whirl a weight round on the end of a string, centrifugal force keeps the string tight.
Centrifugal machines are used to wring the water out of wet clothes, molasses out of sugar and oil out of oily waste, **9**, 379

Centurion was one of the ships of Anson's famous voyage round the world, **2**, 317
Pictures: After Rounding Cape Horn **2**, 317
Getting the Sick Ashore, **2**, 318
A Ship Destroyed, **2**, 319
The Spaniard Gives In, **2**, 321

Century. A group of 100 things of the same kind; a period of 100 years. A batsman is said to reach his century when he scores his hundredth run in an innings.

Cephalonia is an island of Greece, in the Ionian Sea.

Ceramics. A word applied to the art of the potter and the worker in clay which includes the making of earthenware, stoneware, and porcelain or china ware. See *The Potter's Ancient Craft*, **9**, 195

Cereals are grain-bearing grasses cultivated for food. They include wheat, barley, oats, rye, rice, maize, millet and others less well known.
Picture: **10**, 71

Cerebellum is an important part of the brain. It is round in shape, and is situated just above the back of the neck. Its chief work is to co-ordinate the various movements of the body, so that the muscles work in harmony, **6**, 404

Cerebrum. This is the largest and most important part of the human brain. Its structure is similar to that of the *cerebellum*, but its work is more varied, **6**, 405

Ceres is a very small planet named after the patron goddess of Sicily.

Ceres. In Roman mythology, the goddess of agriculture; the Greek name was Demeter.

Cerium is a rare metal, one of the elements (symbol Ce) obtained chiefly from an earth called cerite, which is its chloride It has a steely-grey colour and a bright surface. Oxide of cerium is used in the manufacture of incandescent gas mantles.

Cernauti is the capital of the Bukovina district of Rumania.

Cerro de Pasco, in Peru is the loftiest town in the world, being 14,270 ft. above sea level. Other high cities or towns are La Paz, capital of Bolivia, Cuzco in Peru, Quito, capital of Ecuador, and Mexico City, **9**, 314

Certosa di Pavia is the name of a monastery about twenty miles from Milan in northern Italy. It was built by the Visconti family in fulfilment of a vow.
Picture: **4**, 148

Cerussite is the name of one of the ores from which lead is obtained, **6**, 137

Cervantes-Saavedra, Miguelde (1547-1616). A soldier in early life, he was taken prisoner and became a slave to Barbary pirates. Escaping, he returned to Spain, and his immortal book *Don Quixote* appeared in 1605.

Ceské Budejovice. See *Budweiss*

Cetewayo (1836-84) was a famous King of the Zulus He fought the British in the Zulu War, 1879, **3**, 307

Cetinje. See *Titograd*

Ceuta is the chief port of the Spanish zone of Morocco. It is practically opposite Gibraltar, **4**, 166
—the bishop of Ceuta and Columbus, **2**, 275

Cevennes is the name of a chain of highlands in France forming the eastern edge of the Auvergne Plateau. They stretch across the country for over 300 miles, **4**, 13

Ceylon, Dominion of. Ceylon is a large island of the Indian Ocean, lying south of India across the Palk Strait Since February 1948 Ceylon has been an independent Dominion of the Commonwealth of Nations. Colombo is the capital. The Dominion is over 200 miles long and 137 miles wide, and of its population of over 6½ million more than 4½ million are Singhalese. Coconuts, rice, tea, and rubber are important products, and plumbago and precious stones are among the mineral riches. See *The Island of Ceylon*, **3**, 361 *et seq*
—retained by Britain under the Treaty of Vienna, **2**, 208
—achieves Dominion status, **2**, 258
—Ceylon's trade with Britain, **4**, 372
Pictures Giant Bamboos in Ceylon, **4**, 360
Coconut Palms in Ceylon, **4**, 361

C.F. means Chaplain to the Forces

C.H. means Companion of Honour.

Chablis is a town of France famous for its wines.

Chacma. A species of baboon found in Africa. It is sometimes known as the pig-tailed baboon.

Chaco is a territory in the Argentine republic. Resistencia is the main town. South American Indians live in this region, **4**, 320

Chad is a lake of the Sudan, in Africa. Its area varies according to the season, but in the wet season it covers about 20,000 sq. miles

Chaff. (1) A food prepared for livestock by passing hay and straw through a chaffcutter. (2) The husks of the corn winnowed during the process of threshing, **6**, 392

Chaffinch. One of the best-known British birds. The head of the male is slate-blue, and the back a warm chestnut colour. The brown wings are crossed with a broad white band; the breast is pinkish, fading to white. The female bird is rather duller in appearance. Length about 6 in., **1**, 166

Colour Plate 1, *between* 160 and 161 (Plate 1)

Chagres. A river in the Panama Canal Zone of Central America. It was dammed during the building of the Canal, 4, 306; 5, 57, 58

Chaillot, Palace of. Is a spacious building in Paris on the banks of the River Seine used by the United Nations Organisation.

Chain is a term used when making crochet, 8, 400
Picture: 8, 400

Chained Library is the name given to a collection of books made safe from removal by heavy chains. There is such a library at Wimborne Minster Church and another at Hereford Cathedral.
Picture: 3, 39

Chain Stitch in embroidery is suitable only for thick strands of silk, wool or cotton, 8, 413
Picture: 8, 414

Chaka was the name of a famous Zulu king. He was slain by his brother Dingaan, 3, 307

Chakkri is the name of the most famous royal dynasty of Siam. Statues of the Chakkri kings can be seen in a building near the Temple of the Emerald Buddha.
Picture. 4, 211

Chaldea is the name of the country which in ancient times occupied the area near the Rivers Tigris and Euphrates. The Chaldeans were one of the peoples who reached a high level of civilisation in the ancient world (4000-2000 B.C.), 2, 401; 9, 14

Chaldeans were the people who lived near the Tigris and Euphrates rivers in the time of ancient Babylon. In olden days they numbered among them talented astronomers. Chaldean shepherds are thought to have divided the stars into groups or constellations, 8, 132, 171; 9, 14

Chalfont St. Giles is a village of Buckinghamshire. The house at Chalfont in which John Milton lived may still be seen.

Chalgrove Field, near Oxford, was the scene of a battle of the Civil War (1643) in which Hampden was slain, 2, 162

Chalk is a soft, white, earthy rock, almost pure carbonate of lime. Chalk hills were at one time below the sea and have since been raised by movements of the earth's crust, 9, 316

Chalk, Age of. See *Age of Chalk.*

Chalk Soil means, in a gardening sense, the thin earth found over chalk rock. It requires the addition of loam and moisture-holding material, 8, 272

Challenger was the name of the ship in which Captain Fremantle visited Australia in 1829, 3, 219

Challenger Expedition, made in H.M.S. *Challenger,* 1872-76, was for the purpose of mapping the beds and studying animal life and general conditions of the Atlantic, Pacific and Antarctic Oceans, 2, 368

Chalons-sur-Marne is a large town of France, in the Marne department. It is famous for wines.

Chamberlain, Rt. Hon. Neville (1869-1940). Younger son of well-known British statesman, Joseph Chamberlain, entered Parliament in 1918. He held various Government offices before becoming Prime Minister in 1937 when by his policy of appeasement he endeavoured to avoid European war. In 1940, eight months after the outbreak of the Second World War, he resigned and was succeeded by Mr. Winston Churchill, 2, 248, 413

Chamber Music. A term applied to music suitable for a small orchestra to play in a room, as distinct from that suitable for a large orchestra in a concert hall.

Chameleon. A species of lizard. It can assume the colour of its surroundings, 1, 152
Picture 1, 151

Chamois. An animal that is sometimes referred to as a goat-antelope, as it has similarities with both. About 2½ ft. high, it is found in the mountain ranges of southern Europe and western Asia. The skin is valuable as the well-known chamois leather. (*Pron.* sham-wah)

Chamomile. See *Camomile.*

Chamonix. A town of France situated near Mont Blanc. It is a centre for mountaineering.

Champagne. A district of France, noted for its vines and the champagne produced from their fruit, 4, 13

Champagne Castle is one of the highest peaks in the Drakensberg Mountains of South Africa. It reaches a height of 11,500 ft., 3, 304

Champagne Cauldron is the name given to one of the geysers or natural hot springs of New Zealand, 3, 260

Champlain Samuel de (1567-1635). French governor in Canada, he made several voyages thither, founding Quebec in 1608, 2, 407; 3, 155

Champlain is a large lake of the U.S.A. It is found between the States of Vermont and New York

Champs Elysées is the name of a famous avenue of Paris, 4, 12
Photo to ie *Supplemen.* Of the Seine and the Rhône, 4, *between* 112 and 113

Chancellor, Richard (died 1556). A famous English navigator, he joined Sir Hugh Willoughby in the search for the North-East Passage, 2, 304
Picture: 2, 305

Chancellor of the Exchequer is the member of the Government responsible for managing all matters relating to the collection and spending of public money, 9, 318

Chan Chan was an important city in the country of the Incas, the early inhabitants of Peru. There are extensive ruins of the city. See also *Incas.*
Pictures: Temples and other ruins, 9, 31, 33

Chandelier. An ornamental support for candles or lights, hanging from the ceiling. It has a number of branches radiating from a centre. Many old chandeliers, originally made to hold candles, are now equipped with electric bulbs.

Chang-Chow is a silk-manufacturing city of Fukien, China.

Channel Ferry Towns. *Dover,* for Calais, Ostend and Dunkirk; *Folkestone* for Boulogne; *Newhaven,* for Dieppe. 3, 36

Channel Islands, belonging to Great Britain, are found north of the Normandy coast. Jersey, Guernsey, Alderney and Sark are the most important of the islands, 3, 52
Pictures: The Little Harbour of a Feudal Island, 3, 52
Mont Orgueil Castle, 3, 53

Chanterelle. One of the many fungi that are eatable, 1, 359

Chantilly is an ancient town of France noted as a centre for horse-racing.

Chantrey, Sir Francis Legatt (1781-1842). Though left an orphan at twelve, he became one of the greatest sculptors of his time. Left his fortune to the Royal Academy (the Chantrey Bequest) for the purchase of works of British Art.

Chantry. A part of a church or cathedral in which priests chanted Mass.

Chanute, Octave (1832-1910). Of French parentage, he went to America and there experimented with gliders. His work greatly influenced the Wright Brothers, who flew the first aeroplane, 5, 184, 191

Chapel-en-le-Frith is an industrial town of Derbyshire. It has paper mills.

Chapman, George (1559-1634). English translator, dramatist and writer. We owe to him a great translation of Homer, 7, 120

Chapter House. That part of a monastery or religious centre where meetings are held to discuss important matters, 2, 118

Chapultepec Park is in Mexico City, the capital of Mexico and is the ancient home of Mexico's rulers. It is approached by the splendid Paseo de la Reforma
Picture. 4, 300

Char. Name of a fish of the trout and salmon family. It is found in many European lakes and in British inland waters
Special Colour Supplement: British Fresh Water Fishes, 8, *between* 256 and 257 (Plate 2)

Charcoal. A form of fuel obtained by the charring of wood. Charcoal-burning is a very ancient industry associated with the New Forest, 9, 411
-charcoal from the Landes district of France, 1, 314

Charcot, Jean Martin (1825-93). Made researches into the causes of nervous diseases and was a great pioneer in this direction.

Chard is a town of Somerset. It has a considerable woollen industry.

Chardonnet, Count Henri de. A French scientist, he produced artificial silk yarns that were woven into fabric, 6, 347

Chares of Lindus (fourth century B.C.). Believed to have been the sculptor of the Colossus of Rhodes, one of the seven wonders of the ancient world, 7, 292

Chariot. A two-wheeled, horse-drawn vehicle used in the ancient world for both war and sport.
War chariots of Darius, 2, 43
Picture: 2, 44
Chariot racing in the Circus Maximus, 2, 75

Charlatan. A quack; one who merely pretends to be skilful; an impostor.

Charlecote Park is a beautiful sixteenth

century mansion near Stratford-upon-Avon. It has been the ancestral home of the Lucy family since the twelfth century and is associated with Shakespeare. It remained in the Lucy family until 1946 when it was handed to the National Trust, 3, 406 *et seq.*
Picture: 3, 408

Charlemagne (742–814), or Charles the Great, was one of the foremost Holy Roman Emperors, being so crowned on Christmas Day A.D. 800. This title lasted until 1806, 2, 404; 4, 72. (*p.h.*)
—France was part of his Empire, 4, 6
—Switzerland, a part of his Empire, 4, 56
—The Song of Roland, 5, 409

Charleroi is a town of Belgium, on the River Sambre. It has plate-glass factories, 4, 24

Charles I (1600–49). Son of James I, he became King of Great Britain and Ireland. He was condemned to death, after a civil war, 2, 160 *et seq.*, 407; 3, 22; 9, 325
Pictures: " When Did You last see Your Father ? " 2, 160
Charles I Leaving Westminster Hall, 2, 162
The Execution of Charles I, 2, 163
The Children of King Charles I, 7, 40
Charles I by Van Dyck, 7, 42
William Harvey and King Charles I, 7, 355

Charles II (1630–85). He was the second son of Charles I and returned from exile in Holland to be King of Great Britain and Ireland in 1660, 2, 165 *et seq.*, 407; 3, 22
—and the Hudson's Bay Company, 3, 156
Pictures: Charles II landing at Dover, 2, 166
Charles II and Wren at St. Paul's, 2, 167

Charles IV. A king of Bohemia, he built the Charles bridge at Prague.
Picture: 4, 92

Charles V (1500–58). King of Spain and Emperor of the Holy Roman Empire, his rule extended over the Low Countries where he tried to bend the people to his will, 2, 282; 4, 20, 74

Charles VII (1403–61). King of France. He finally drove back the English who occupied much of his kingdom and entered Paris in 1436, 2, 130

Charles VIII, King of France (1470–99). He ascended to the throne in 1483. His help was sought by Columbus, 2, 275

Charles XIV (1764–1844). Born at Pau, in southern France, he became one of Napoleon's marshals. In 1810 he was chosen crown prince and heir to the Swedish throne which he ascended in 1818, ruling Sweden and Norway, 4, 34

Charles Bridge is at Prague, the capital of Czechoslovakia and is six hundred years old. It was built by King Charles IV of Bohemia.
Picture: 4, 92

Charles Edward. See *Prince Charles Edward.*

Charles Martel. A warlike leader of the Franks who led them from A.D. 714 until his death in 741. One of his greatest victories was the defeat of the Moors near Tours in 732, 4, 6

Charles, Professor. One of the first aeronauts to ascend in 1783 in a gas balloon, 5, 185

Charles the Great. See *Charlemagne.*

Charles the Hammer is the English name of Charles Martel, a leader of the Franks. See *Charles Martel.*

Charleston, South Carolina, is one of the great cotton ports of the U.S.A., 4, 292

Charlies. Before the Metropolitan Police Force was founded in 1829 the parish constables and night-watchmen were the inadequate guardians of law and order. The night-watchmen were nicknamed " Charlies."
Picture: 9, 76

Charlotte Dundas. The first practical steamboat employed in Great Britain was used on the Forth-Clyde Canal as a tug. It was alleged that the wash from her paddlewheel caused damage to the sides of the canal and her owners were forced to withdraw her, 8, 30
Picture: 8, 34

Charlottetown, a seaport. It is the capital of Prince Edward Island, Canada.

Char Minar is one of the famous buildings in the great city of Hyderabad, in the state of the same name in India. It was erected in 1549.
Colour Plate: At the Char Minar in Hyderabad, 3, *facing* 284

Charnwood Forest is a district of Leicestershire not far from Loughborough, 3, 71

Charon. In Greek mythology he was the ferryman who rowed the souls of the dead across the River Styx to Hades.

Charter. A document in which the Crown confers certain privileges on a town, society or company. When a town has become large enough to have a local government (mayor, aldermen and councillors) of its own it petitions the King in Council to be granted a charter which will make it a borough. See also *Borough Council.*

Charter, The Great. See *Magna Carta.*

Charter Island is in the Thames at Runnymede. John may have signed Magna Carta on this island, 3, 412
Picture: 3, 409

Charters Towers is one of the chief goldmining centres of Queensland, Australia. Its population is more than 7,500, 3, 236

Chartists were supporters of a movement for sweeping political reforms, set forth in the People's Charter, during the years 1832 to 1848, 9, 328

Charybdis, in the Greek legends, was a monster who made a fearful whirlpool in which ships were lost, 5, 381; 9, 361

Chateau D'If, which figures in *The Count of Monte-Cristo,* stands on an island off Marseilles.
Picture: 4, 17

Chateaubriand, François Réne de (1768–1848). Well-known French writer and traveller.

Chateau Frontenac. A magnificent hotel at Quebec overlooking the St. Lawrence River from the Heights of Abraham.

Chatham. Great naval station in Kent, standing on the Medway, 3, 34
—attacked by the Dutch (1667), 2, 168

Chatham Islands form a group in the South Pacific. They belong to New Zealand, 3, 274

Chatham, William Pitt, First Earl (1708–78). Known as the " Great Commoner," he was a brilliant orator and one of our outstanding statesmen, 2, 180, 184, 194, 409; 9, 328

Chatterton, Thomas (1752–70). English poet, born at Bristol. Most famous for his Rowley Poems, which he claimed had been written in the fifteenth century by a monk. The poems possess great merit.

Chaucer, Geoffrey (1340–1400). The first great English writer, considered to be " the father of English poetry." His famous work, *The Canterbury Tales,* was begun about 1387, 2, 134, 404; 7, 128. (*p.h.*)
—Chaucer's story of the seven metals, 6, 137
Pictures. Reeve, Friar and Parson; Four More Characters, 7, 126
Chaucer and His King, 7, 127
Colour Plate: The Canterbury Tales, 7, *facing* 124

Chaudière Falls, on the Ottawa River, furnish the capital of Canada with power, light and heat, 3, 194

Chauffeur, the paid driver of a private car. The word means *stoker,* and dates from the time of steam-driven motors.

Cheam is in Surrey. At a preparatory school here H.R.H. the Duke of Edinburgh was educated, 2, 266

Cheddar. A small town of Somerset famous for its limestone caves and for cheese.

Cheddar Gorge is the name given to a deep gap hewn by water in the Mendip Hills.
Picture: 3, 56

Cheese is an invaluable article of food made from milk, some varieties being pressed into a firm mass. Cheddar, Stilton and Cheshire are well-known varieties of English cheese, 3, 56, 263
Pictures: Inside a New Zealand Cheese Factory, 3, 272

Cheesewring is the name given to a curious rock formation to be found near Liskeard, Cornwall.
Picture: 3, 45

Cheetah. An animal found in India, Persia and parts of Africa. In some places it is used in sport, *i.e.*, for the hunting of antelopes. It is about as large as a leopard.

Chekalov is a Soviet airman who flew over the North Pole in 1938, 2, 365

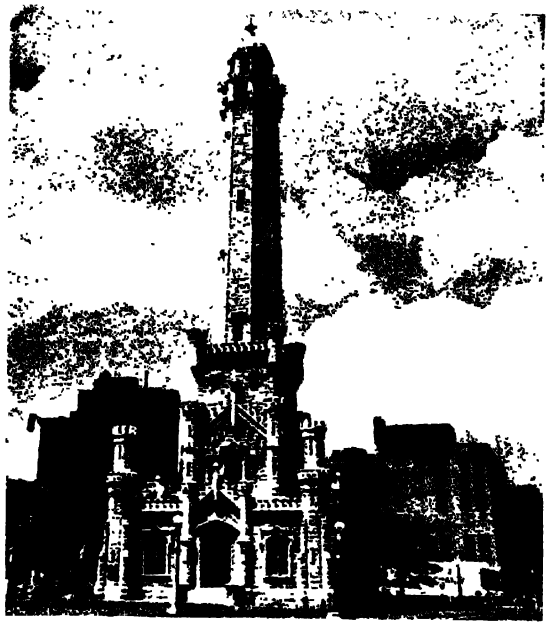
Chelmer. A river of Essex. It flows through Chelmsford and joins the Blackwater at Maldon.

Chelmsford. The county town of Essex and a great market centre. It is interested in electrical and other engineering, and stands on the River Chelmer, 3, 65

Chelsea. A borough of south-west London on the north bank of the Thames. It is a favourite residential district. Two centuries ago its china works were famous.
Picture : Chelsea China, 9, 202

Cheltenham is a tourist, holiday and health resort of Gloucestershire. It has many educational establishments

CHICAGO, SECOND CITY OF THE U.S.A.



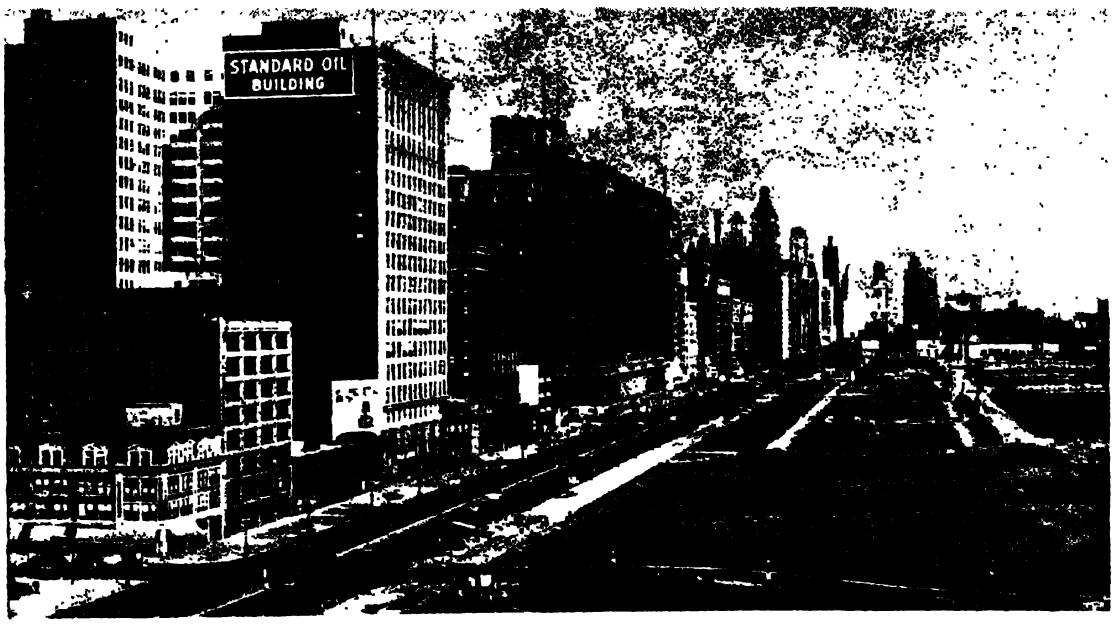
Three Lions.

Chicago (see p. 76) was a village in 1831. By 1877, when it was almost destroyed by fire, it had over 300,000 inhabitants. The Water Tower, seen above, is one of the few landmarks that survive.



Three Lions.

The city stands on Chicago River, and here we see the Dearborn, Clark, La Salle and Wells Street bridges. In the foreground (left) is the Pure Oil Building; background (right) Merchandise Mart.



Chicago Association of Commerce and Industry.

Michigan Avenue is Chicago's most famous street, and here it is seen with part of Grant Park on the right. In the middle foreground, with flags flying on the roof, is the Stevens Hotel, the largest in the world. Further along to the right are the Art Institute, the gleaming white Wrigley Building and the Tribune Tower.

including public schools for girls and for boys.

Chemist. A person who makes or sells chemicals and drugs, or uses chemicals in his work, or one who studies the science of chemistry. Chemists keeping shops where drugs are sold for medicinal purposes are generally known as pharmaceutical chemists. The word is a shortened form of alchemist.

Chemistry is the science dealing with the study of the composition of substances and includes both a knowledge of the materials of which the world is made, and also of the processes known as chemical changes and what causes such changes, **9**, 302

Chemnitz is a manufacturing town of eastern Germany and the third largest town of the state of Saxony. It is an important textile manufacturing centre, **4**, 84

Chenderoh Dam. This dam is on the Perak River in Malaya It harnesses the river water to provide power for the tin mines of the Larut and Kinta valleys, **3**, 403

Cheops was a king of ancient Egypt and was the builder of the Great Pyramid. He reigned about 2720 B.C. or even earlier. Cheops is his Greek name. His Egyptian name is Kufu, **5**, 115
Picture: **4**, 195

Chephren. He was a king of ancient Egypt and was the builder of the Second Pyramid. He succeeded Cheops (*q.v.*) as second King of the Fourth Dynasty and reigned for about fifty years about 2700 B.C., **4**, 195

Chepstow is a town of Monmouthshire. It has a ruined castle and town walls, **3**, 75

Cheque is a written order to a banker to pay a sum of money to the person whose name appears on it, **9**, 354

Chequered means to be marked with squares of different colours; varied with a display of different colourings. A chess board has a chequered design of squares in two colours.
A chequered life is one of mixed good and bad fortune.

Chequers is the name of a country residence for British Prime Ministers, presented by Lord and Lady Lee of Fareham in 1917. See *Prime Minister.*

Cherbourg is a seaport on the north coast of France. It is a place of call for Atlantic liners, **4**, 14
—captured by the Allies (1944), **2**, 254

Cherokees is the name of a tribe of Red Indians.

Cherry. A tree belonging to the Prunus family, bearing a fruit, spherical and smooth. The cultivated kinds are most probably derived from the wild or dwarf cherry and from the gean. There are several varieties of sweet cherries, while the Morello, Duke and Kentish are sour and used for cooking and preserves of different kinds. Besides the fruiting cherries, other types of the tree are grown for ornamental purposes. The Japanese cherry grows double blossoms but no fruit.

Cherry Pie. Popular name for the flowering plant heliotrope (*q.v.*).

Cherwell. A river of Oxfordshire which joins the Thames at Oxford, **3**, 25

Chesapeake Bay is on the eastern coast of the U.S.A., **2**, 278

Cheseman, Robert. The King's Falconer in the time of the artist Holbein, **7**, 38
Picture: **7**, 38

Chesham is a small manufacturing town of Buckinghamshire. It stands on the River Chess.

Cheshire is one of the English north-westerly counties. It is a great farming district, noted for its cheese, and is a centre of the salt industry. Its rivers are the Dee, Mersey and Weaver. Birkenhead, Stockport, Congleton, Macclesfield and Crewe are important towns, Chester being the chief city, **3**, 76
—Old houses in Cheshire, **3**, 410 *et seq.*
Pictures Across the Cheshire Plains, **3**, 405
Little Moreton Hall, **3**, 406
Lyme Hall, **3**, 408

Chesil Beach. Name given to a shingle bank some 17 to 18 miles in length near Portland on the Dorset coast. A peculiar feature is that the pebbles decrease from 1 to 3 in. in size at Portland to the size of peas at the West end, **3**, 38

Chess is a game of great antiquity and is believed to have been played for at least 1,400 years. Each player has sixteen pieces, and the game is played on a board of sixty-four squares, alternating black and white. The pieces are also white and black, one player taking white and the other black The different pieces are king, queen, bishop, knight, rook (or castle) and a number of pawns. (*p.h.*)

Chester is the county town of Cheshire and stands on the River Dee. It is noted for its cathedral, ancient houses, city walls, and its famous Rows, **3**, 100

Chesterfield is a town of Derbyshire which manufactures textiles and other goods. It has a famous church with a twisted spire, **3**, 73

Chesterfield, Philip Dormer Stanhope, Fourth Earl (1694 1773). His fame rests chiefly on the letters he wrote to his son.

Chesters is the name of a Northumberland village. Near by, on Hadrian's Wall, is the Roman station of Cilurnum.
Picture: **3**, 82

Chesterton, Gilbert Keith (1874–1936). An outstanding figure in the literary and journalistic worlds. He was author of the "Father Brown" stories, **7**, 250
Picture: **7**, 250

Chestnut. See *Horse Chestnut* and *Sweet Chestnut.*

Cheviots is the name given to a range of hills in the south of Scotland. A famous breed of sheep is named after these hills, **3**, 109

Cheviot Wool is a type of wool very largely used in the making of the famous Scotch tweeds, **6**, 358

Cheyenne, a centre of ranching interests, is capital of the State of Wyoming, U.S.A.

Chia is a Chinese expression meaning "the family." In China, life is built up round the family group which is the most important unit in every community, **4**, 239

Chiang Kai-shek, General (born 1888). Succeeded Dr. Sun Yat-sen as leader of the Kuomintang (People's Party) of China and became President of the Chinese Republic. He led the Chinese Nationalists against the Japanese and later against the Chinese Communists. He resigned the Presidency of Nationalist China in 1949, **2**, 253, 414; **4**, 231

Chiapas is a state of Mexico having a seaboard to the Pacific.

Chicago is the second city of the U.S.A. in the State of Illinois. It is the chief grain market for the Middle West and a vast commercial centre with extensive stockyards and a huge business in meat-packing, **4**, 272
Pictures **10**, 75

Chichester is a city of Sussex. Its Market Cross is one of the finest in the country and the bell tower is detached from its famous Cathedral

Chicken in Wool. How to make this interesting woolly toy, **8**, 378

Chickweed. A familiar wild plant and garden weed it has oval leaves growing in pairs and small white flowers It is spread by seeds, surface runners and underground stems, **1**, 304

Chicle is a gum used in the manufacture of chewing gum It is tapped from massive trees, **4**, 299

Chicleros are South American natives who tap certain kinds of tree for the material used in making chewing gum

Chicory. A perennial plant the roots of which form a winter salad The foliage makes a good food for rabbits.

Chief Pleas is the name of the parliament of the island of Sark in the Channel Islands.

Chiff-Chaff. One of our summer visitors among birds so named from the "chiff-chaff" sounds it brings into its song About 4½ in in length

Chihuahua is the capital of Chihuahua state in Mexico and is an important silver and lead mining centre of the north Its cathedral was built by means of a levy on the silver mines, **4**, 298

Childe Harold's Pilgrimage, published 1812, was the first great success of the poet Byron, **7**, 144

Children's Book Weeks are arranged in different towns throughout this country to give young readers the opportunity of seeing a wide selection of books, **7**, 277

Children's Treasury of Verse, A. An Anthology or Collection of Poems for girls and boys, **9**, 85 *et seq.*

Childs Glacier is on the Copper River in the U.S.A. territory of Alaska.
Picture: **4**, 295

Chile is a republic on the western side of South America. It is over 2,500 miles in length but comparatively narrow and is dominated by the Andes Mountains. It raises cattle and sheep; grows wheat, general farm crops and fruit and has a wealth of minerals, including gold, silver, copper, and nitrates.
The capital is Santiago, **4**, 320 *et seq.*, 393, 394

Pictures: Work in a Nitrate Refinery, 4, 326
The Sign of the Cross, 3, 327
The World's Largest Copper Mine, 4, 389

Chili. A garden plant with ornamental fruits of various colours.

Chili Pine. Another name for the Monkey Puzzle tree or Araucaria. See *Araucaria*

Chillon, Castle of. This famous castle stands on a small island at the eastern end of Lake Geneva in Switzerland. *Picture.* 4, 54

Chiloe is a province of Chile. It includes several islands, 2, 346

Chiltern Hills. Range of chalk heights which begin near the Thames above Reading and continue in the direction of Aylesbury, 3, 18
—where the chalk came from, 1, 8

Chiltern Hundreds. The stewardship of the Chiltern Hundreds is a purely nominal post which carries a salary of 20s. a year and is the gift of the Chancellor of the Exchequer. member of Parliament cannot resign in the normal way but must vacate his seat if he accepts an office of profit under the Crown. He therefore applies for the stewardship of the Chiltern Hundreds and can then give up his seat
The stewardship of the manor of Northstead in Yorkshire is a similar post and can be applied for in the same way 9. 54. See *Hundred*

Chimæra are fish often about 4 ft in length found in various seas They are not unlike sharks

Chimborazo is a 20,000 ft. peak of the Andes Mountains in South America, 4, 330

Chimney Bell-Flower. Popular name for the perennial form of the plant Campanula (*q.v.*).

Chimpanzee. An African ape, standing about 4 ft. high. It sleeps in tree boughs where it constructs a special platform, 1, 100
Photo-tone Supplement. 1, *between* 96 and 97

China is a great republic of eastern Asia Its population is more than 463 millions of people and its area is over 4½ million square miles. Until 1912 it was one of the world's oldest monarchies, but then became a republic. In recent years it has suffered by the Japanese war, followed by civil war between Nationalists and Communists. China is now controlled by the Communists and Peking (Peiping) is again the capital, 4, 223 *et seq.*, 375
—the early history of China, 2, 403
—China is probably the oldest nation in the world, in the sense that it has remained a separate entity for thousands of years. China was civilised while most of Europe was barbaric, but it remained cut off from the rest of the world until comparatively recent times. The Chinese language is the oldest living tongue, and has lasted for over 5,000 years with little change, 9, 34
Pictures: The Great Wall of China, 4, 223, 225
On the Banks of the Grand Canal, 4, 224
A Pilgrim's Offering, 4, 226
A Taoist Priest, 4, 226
A Sacred Mountain Landscape, 4, 227
The Springtime Pattern of China's Fields, 4, 228
Spinning Cotton Yarn, 4, 229
Carpet Workers at Peiping, 4, 230
Artist Craftsmen at Work, 4, 231
Resting from their Studies, 4, 234
Scenes in Nanking, 4, 235
Kites for the New Year, 4, 236
Chinese Street Vendors, 4, 237
Off the Shantung Coast, 4, 238
The Hall of Prayer, Peiping, 4, 239
Up Amidst the Rice Fields, 4, 240
The Tower on Tiger Hill, 4, 241
Where Emperors Ruled, 4, 242
Hong Kong's Fine Harbour, 4, 243
A Peaceful Fishing Village, 4, 244
A Resting Fisherman, 4, 245
Canton, 4, 246

China Clay is a form of white clay found largely in Cornwall. It is also known as kaolin, 3, 44 and 52
Pictures. A Cornish Clay Pit, 9, 197

China Grass. See *Ramie.*

Chinchew. The name of a Chinese port visited by Ibn Batuta, the fourteenth century Moorish traveller, 2, 272

Chinchilla. A rodent animal of the squirrel class, it is found in parts of South America and is much esteemed for its fur.

Chinchilla Rabbit. A variety of domestic rabbit kept mainly for its pelt or skin, 8, 322

Chinde. A port of Mozambique (Portuguese East Africa) at the mouth of the River Zambezi, 3, 275

Chinese Pæonies form an interesting section of this family of plants. Many varieties bear large double flowers that are sweetly scented.

Chingford, a town of Essex near Epping Forest and a residential centre of Greater London.

Chinkiang, standing on the River Yangtze, is a large town, port and trading centre of China.

Chinon. A town in France, in the department of Indre-et-Loire Here Henry II of England died in 1189, 2, 101

Chinook is the name of a warm wind of Canada It blows from the Pacific Ocean, 3, 177

Chins is the name of a race of people living among the Chin Hills of Burma, 4, 218

Chin-thé is the name of a stone figure set up in front of a Burmese monastery or pagoda to ward off the evil spirits.
Picture. 4, 219

Chionodoxa. A bulbous plant producing star-shaped flowers. Often known as Glory of the Snow.

Chippendale, Thomas (*c.* 1718–79). A famous eighteenth-century English cabinet maker, 2, 183

Chippenham is an ancient town of Wiltshire, once a place of residence of King Alfred. It has manufactures but is a centre for farm produce. In the neighbourhood is the historical Maud Heath's Causeway.

Chislehurst, Kent. An outer residential suburb of Greater London, it is noted for its chalk caves or dene holes.

Chitor is a town of Rajputana, India, famous for its ruined fortress, 3, 341
Picture: 3, 343

Chittagong is a district of East Bengal, in the Dominion of Pakistan. Its chief town, of the same name, is a great commercial centre and the seaport for Assam, 3, 324

Chitral is a State of British India on the edge of the Hindu Kush Mountains. It has a capital of the same name.

Chivalry, Orders of. See *Orders of Chivalry.*

Chives. This is a substitute plant for onions in salads, shepherd's pies, etc.

Chloride is a combination of chlorine with some other element. The best-known chloride is common table salt, which is chloride of sodium. Chloride of lime is a disinfectant.

Chlorine is a greenish-yellow gas, one of the elements. If breathed in, it causes violent choking. Its chief use is for bleaching.

Chloroform was discovered by Liebig in 1831 and was first used as an anæsthetic by Sir James Simpson of Edinburgh in 1848, 7, 384; 9, 334

Chlorophyll. Name given to the green colouring matter in the leaves of plants, 7, 416

Chocomil is a wind that blows across Lake Atitlan in Guatemala, 4, 302

Chonos is the name of a group of islands off the southern coast of Chile, 2, 346

Chopin, Frederic François (1809–49) (*pron.* Shopan). A Polish musical composer of great genius who settled in Paris, 7, 180
Picture. 7, 175

Chorley is a manufacturing town of Lancashire, a centre in the cotton industry.

Cho-sen is the Japanese name for Korea (*q.v.*).

Chouart, Medart. A French colonial adventurer who explored, with Pierre Radisson, the Hudson Bay region of Canada, during the later seventeenth century. They travelled to England, told King Charles II what they had found, and the result was the foundation of the Hudson Bay Company, 3, 156

Chou Dynasty ruled China from 1122–256 B.C. and is the longest known to Chinese history. The period in which it ruled was one of great progress, 4, 223

Chough. Member of the crow family. Found only in wild, remote districts. It is glossy black, 16 in. in length and has a long pointed beak.

Chou-King. Title of a Chinese book in which occurs the earliest account of a solar eclipse (2136 or 2128 B.C.), 8, 126

Choum. A tent made of skin as used by Soviet people on the shores of the Arctic Ocean, 4, 108

Christchurch. (1) A town of Hampshire on the Rivers Stour and Avon. Its Priory Church dates from Norman times.
(2) A city of the Canterbury Plains of South Island, New Zealand, 3, 270
Pictures: Christchurch Cathedral, 3, 270, 273

Christchurch Cathedral, founded in 1038, is one of the famous buildings of Dublin, 3, 150

Christ Church College, Oxford, was founded by Cardinal Wolsey.
Picture: 3, 28

—Edward VII was a member of the College, 2, 223

Christianborg Castle, near Accra, is the residence of the Governor of Gold Coast Colony, West Africa.
Picture: 3, 379

Christian, Fletcher. One of the leaders of the mutiny on the *Bounty* (1789). Led by him some of the mutineers sailed to Pitcairn Island. This was the origin of the British colony there, 3, 391

Christiania was the former name of the Norwegian capital, now called *Oslo* (*q.v.*).

Christiansborg Palace is in Copenhagen, the capital of Denmark. It is used by the Rigsdag (Parliament) and the supreme Court of Justice.
Picture: 4, 42

Christie, James (the elder) (1730–1803). A celebrated London auctioneer. At one time exhibitions of the Royal Academy were held on his premises and today Christie's is known all over the world for its sales of pictures, etc.

Christmas Bell. A scarlet flower found in the Australian "bush," 3, 248

Christmas Cards probably sprang from schoolboys' decorated letters home, and the idea of ornamental cards for personal greetings was first adopted in 1845, 9, 340

Christmas Island. (1) An island of the Pacific discovered by Captain Cook and now forming part of the Gilbert and Ellice Islands Colony.
(2) An island in the Indian Ocean forming part of the British colony of Singapore, 3, 388

Christmas Trees are forms of the spruce fir known as *picea excelsa*. Thousands of them are specially grown for the Yuletide celebrations.

Christophe, Henri (1767–1820). He took part in the Negro uprising against the French in Haiti, was made President of Haiti in 1807 and four years later had himself proclaimed king. He died by his own hand, 4, 307
Picture: 4, 310

Chrome Steel is used for armour plate and for the balls and races of ball bearings.

Chromium is a white metal, one of the elements (symbol Cr). It was discovered in 1797 by a Frenchman, Vauquelin. In recent years it has been used in the preparation of certain very tough steels and of "stainless" steel, now so popular for cutlery, 6, 78, 108

Chromosphere is the name given to a belt of glowing gases which surround the sun, 8, 127

Chromosome is a botanical term for the threadlike bodies of definite number formed when a nucleus or cell divides up into parts from which other nuclei are developed, 1, 387

Chronicle. An historical record of events, giving them in the order in which they occurred. The Bible contains two books of chronicles of the Hebrew kings.

Chronometer is the name given to an instrument or device for measuring time. The sundial was probably the earliest form of chronometer. It was followed by the water-clock, hour-glass, candle-clock, mechanical clock and watch.
The first ship's chronometers were made in 1761 by John Harrison, who received a reward of £20,000 from the British Government on account of their accuracy. See *Our Clocks* and *Watches*, 9, 219

Chrysalis. A pupa of a butterfly or moth. Caterpillars turn into chrysalides which are often covered with silken cocoons, 1, 248

Chrysanthemum. A popular flowering plant. One group in the family is classed with the hardy annuals.

—C. Maximum. A form of giant moon daisy known as the Shasta Daisy.

Chryse Regio is a territory mentioned by Claudius Ptolemy, the famous Egyptian geographer of the second century A.D., and is said to be Burma, 4, 215

Chrysler Building is one of the great skyscrapers in New York. It is 1,046 ft. high, 7, 330
Pictures: An English "Queen" at New York, 4, 270
Looking Down on New York, 4, 276

Chrysostom, St. (345–407). Ordained in Antioch, he became Archbishop of Constantinople and the most famous preacher of his time.

Chub. A fresh-water fish belonging to the carp family. It often attains a weight of 2 to 3 lb. Dark bluish green on the back and silvery sides.
Special Colour Supplement: British Fresh Water Fishes, 8, *between* 256 and 257 (Plate 3).

Chubb, Charles (died 1845). A locksmith who invented the burglar-proof lock that bears his name.

Chukchis are people of the Asiatic shore of the Arctic Ocean. They belong to the Soviet Union, 4, 108

Chuma was one of the faithful followers of Dr. Livingstone, 2, 338

Chumbi is the name of a valley in Tibet. The Mount Everest Expeditions passed through it, 3, 350

Chungking, in the Province of Szechwan, was the temporary capital of China from 1937 to April 1946 when Nanking again became the seat of government till 1949, when Peking became the capital.

Chuquicamata is a copper mining centre of Chile. The mine here is said to be the largest copper mine in the world.
Picture: 4, 389

Churchill is a port of Manitoba, Canada, on Hudson Bay. The name is also given to a river which flows through the province, 3, 175, 178

Churchill, John (1650–1722). Duke of Marlborough and one of the most famous English generals. He defeated his French opponents time and again during the War of the Spanish Succession (1702–1713), 2, 172, 174, 408; 3, 24, 37
Picture: When Marlborough went to the Wars, 2, 173

Churchill, Sarah, Duchess of Marlborough. Was the wife of John Churchill, Duke of Marlborough, the famous general, whom she married in 1678 when she was eighteen. She had great influence over Queen Anne and used this to advance her husband's fortunes. She lost her influence in 1711, but lived on until 1744. 2, 175

Churchill, Sir Winston Leonard Spencer (born 1874). Elder son of Lord Randolph Churchill, he has been soldier, war correspondent, Home Secretary, First Lord of the Admiralty and Chancellor of the Exchequer. As Prime Minister from 1940 to 1945 he was a born leader of the people during the Second World War. The Order of Merit was conferred on him in January 1946. His books have a great and well-deserved reputation and his recent volumes on the History of the Second World War have achieved success throughout the world. An amateur artist of distinction, he was elected the first Honorary Academician Extraordinary by the Royal Academy in 1948. As statesman and orator his place in history is assured, not only as the great leader of a united nation in the time of their greatest peril, but as the inspiration of all the nations struggling for freedom from Nazi domination. He became Prime Minister again in 1951 and visited the U.S.A. in 1952. Created Knight of the Garter, April, 1953, 2, 222, 248 *et seq.*, 413; 7, 258, 367

—quoted on the Battle of Britain, 2, 251

—and Lawrence of Arabia, 2, 387

—on air raids on Britain, 2, 394, 400
Pictures. Great Leaders Meet, 2, 253
The Hour and the Man, 10, 79

Churchill River. A Canadian river which flows into Hudson Bay, after passing through Saskatchewan and Manitoba. It marks the present edge of the wheat belt, 1, 382

Church of the Holy Sepulchre is one of the three chief religious centres in Jerusalem. It has been a place of Christian pilgrimage since the first church was erected on this site in the year 335.
Picture: 4, 184
Photo-tone Supplement Scenes in the Holy Land, 4, *between* 176 and 177

Church of the Nativity. A sacred structure reared at Bethlehem over the spot where Christ was born.
Picture: 4, 181
Photo-tone Supplement: Scenes in the Holy Land, 4, *between* 176 and 177

Churn. A small Cotswold river which contributes its waters to the River Thames, 3, 25

C.I. means Channel Islands.

Cibber, Colley (1671–1757). A dramatist and actor of repute, he became Poet Laureate.

Cicada. Found in North America, it is said to be the longest-lived insect and to have a life-span of seventeen years. The male insects have a bird-like song.

Cicero, Marcus Tullius (106–43 B.C.). A great Roman who was equally famous as writer and orator, 4, 158

C.I.D. stands for Criminal Investigation Department, a branch of police headquarters at New Scotland Yard, London.

Cid, The, is the national hero of Spanish romance who lived in the eleventh century, 9, 324

Cider is a beverage made entirely from apples. These are pulped and pressed, and the resulting juice is

THE HOUR AND THE MAN



Graphic Photo Union.

It has been truly said that whenever Britain has been in direst peril " the hour has brought forth the man." This was never more true than in the Second World War when, as Prime Minister, *Winston Churchill* (see p. 78), led this country through to final triumph. Here he is seen amid the ruins of the House of Commons debating chamber destroyed by enemy bombs in 1941.



Fox Photos.

Four years after the upper photograph was taken, the desperate struggle in Europe ended in Allied victory. In this picture the architect of victory, the man who had inspired and led Britain, is seen with the late King George VI, Queen Elizabeth (now the Queen Mother), our present Queen and Princess Margaret on the balcony at Buckingham Palace on VE Day, May 8th, 1945.

placed in large open vats and allowed to ferment. Devon, Somerset, Gloucestershire, Norfolk, and Worcestershire are the main cider-producing counties.
Pictures: 3, 55

c.i.f. means cost, insurance and freight. It is a business term used in shipping circles.

Cilfynydd is a typical South Wales mining village.
Picture: 3, 94

Cilician Plain. South-east of the Cilician Taurus is the fertile lowland of the north-eastern Mediterranean around Adana where Turkish farmers grow the usual Mediterranean products. These lowlands of Turkey are known as the Cilician Plain, 4, 160

Cimabue, Giovanni (1240-1302). He was a great Italian artist. Some of his pictures are still in existence, 7, 3

C.-in-C. means Commander-in-Chief.

Cinchona is the name given to a number of South American trees and shrubs which yield the bark from which quinine is obtained. The name comes from Chincon, vice-queen of Peru, who was cured of a fever by this agency in 1638, 1, 311, 334

—Cinchona plantations are found in southern India, in the Nilgiri Hills, 3, 321

—chinchona bark is obtained from the Amazon forests, 4, 316

Cincinnati is a large town of Ohio, U.S.A. standing on the Ohio River. It is a great distributing centre for grain and has many manufactures.

Cinderford, Gloucestershire, is a small town and centre of the Forest of Dean.

Cinema. Abbreviation of cinematograph and used generally as the name for the theatre where cinematograph films are shown. See *Film-making,* 9, 246 *et seq.*

Cinematograph. Apparatus for producing moving-pictures. The word comes from the Greek: *kinema* meaning movement, and *graphein,* to write. In England, William Friese-Greene invented a moving-picture camera and used it for the first time in November, 1889. In America, Edison invented his kinetoscope which was patented in 1893. An important factor in the development of these machines was the invention, also in U.S.A., of the roller film by George Eastman, while Robert W. Paul, an instrument maker of Hatton Garden, London, made many improvements in the machine for projecting the film on to the screen. The first public performance was given in London in 1896. Sound films were first shown publicly in 1928 and brought about another great advance in film-making. See *Film-making,* 9, 246 *et seq.,* 377.

Cingalese. See *Singhalese.*

Cinnamon is the name of a small evergreen tree largely grown in Ceylon and also in the West Indies. From the bark of the tree the produce known as cinnamon is obtained for use in medicine, cooking, etc., 3, 397

Cinquefoil. Name of a wild plant, the leaves of which mostly grow in fives. It bears yellow flowers.
Colour Plate: 1, *facing* 305 (Plate 4)

Cinque Ports is the name given to the ports once entirely responsible for providing England's sea defence. Originally five (Hastings, New Romney, Hythe, Sandwich, and Dover), they were later increased by the addition of Winchelsea and Rye, 9, 324
Picture: Dover, most famous of Kentish Cinque Ports, 3, 4, 5

Cintra is a town of Portugal, not far from Lisbon. It contains the Palace of Pena, a former royal residence, three other palaces, and a castle. Here, after their defeat at Vimiera (*q.v.*) the French signed the Convention of Cintra by which they agreed to leave Portugal (1808), 2, 202
Picture: 4, 137

Cipango was the name given by early European travellers to Japan, 2, 273

Cipher is a word meaning a secret system of sending messages in writing, sometimes spelt Cypher. Many ciphers used the principles of making one letter mean another and of shuffling the letters.
What a message means can easily be found out by anyone in possession of what is called the key to the cipher.

Circe, in the Greek legends, was an enchantress or sorceress, 5, 376
Pictures: Enchantress of the Palace, 5, 376
Circe and the Swine, 7, 121

Circular Quay is a berthing place for ocean-going liners in the very heart of Sydney, the capital of New South Wales, Australia, 3, 230

Circulation is a movement to and fro or round and round through a circuit. One of the greatest of medical discoveries was that of the circulation of the blood, by William Harvey, in or about 1615.
He proved that the blood was continually forced by the heart through the arteries into all parts of the body and returned to the heart through the veins, 7, 356
Picture: 7, 355

Circumference is the distance round a circle or any circular body. In geometry, it is the length of the line that bounds a circle.
The circumference of the earth measures about 25,000 miles.

Circumflex. A French accent, thus ^, made over a particular letter to denote a contraction (usually the omission of an "s") in the root word, e.g. hôtel—hostel.

Circumnavigate means to sail round; to journey round by water. The word is generally used in the sense of sailing round the globe.
Sir Francis Drake, an Elizabethan sailor and explorer, was the first Englishman to circumnavigate the world, in 1580.

Circumscribe means to draw a line round; to limit. A football ground or lawn tennis court is circumscribed by a broad white line to show the limits of play.

Circus Maximus. In the fourth century this circus, at Rome, was the largest in the world.
Picture: 2, 75

Circus, The Wonderful. A Tale for Nursery Folk, 5, 293

Cirenaica. See *Cyrenaica.*

Cirencester. An old town of Gloucestershire which in Roman times was the fourth largest town in Britain, 3, 25

Cirro-Cumulo-Stratus is a mixture of types of cloud in the sky. It is often called a nimbus, 5, 9

Cirro-Cumulus is a type of cloud often seen drifting across the sky in summer, 5, 8

Cirrus is the highest and lightest form of cloud, 5, 9
Picture: 5, 8

Cistercian Monks belong to an order founded at Citeaux (in France) in 1098, 3, 75

Citadel. A fortress in or near a fortified city, to which the defenders might retire for a last stand should the city walls be stormed. The Tower of London was built by the Norman kings as a citadel.

Citizen is a word which may be used in more than one sense. It may denote a member of a particular nation, as when we say a British or American citizen, or it may mean a "burgess" or member of a particular town or city. The "freedom" or citizenship of a city is sometimes conferred as an honour, 9, 35
Picture: The Freedom of the City, 9, 63

Citrus means something belonging to the lemon or citron group of fruits. The citron tree produces a large kind of lemon which is used in making perfumes and confectionery

Citrus Fruits have a rind or peel and a centre formed of pulp.
Oranges, lemons, limes and grapefruits belong to this class.

Citta del Vaticano. This means City of the Vatican and is the official name of the Papal territory of the Vatican in Rome. See *Vatican City.*

City & South London Railway. The first of London's deep-level "tube" lines. Opened 1890, 5, 138

City Hall, Belfast, stands on the site of the old Linen Hall and was opened in 1906.
Picture: 3, 146

"City of London" Flying-Boat. It is a B.O.A.C. Short "Solent" flying-boat which was named "City of London" by the Lord Mayor to mark the 30th anniversary of British commercial aviation.

Ciudad Trujillo is the capital of the Dominican Republic and is named after the president. It was destroyed by hurricane in 1930 and has since been rebuilt, 4, 307

Civet Cat. A flesh-eating animal found in parts of Asia and Africa. It has a slender body, sharp muzzle and long tail.
From this creature a valuable perfume is obtained, 9, 242

Civic means something relating to citizen or citizenship, such as civic duties or civic rights.

Civil Aviation. The airways system in Great Britain is now in the hands of two State concerns, with a mono-

poly of scheduled services in the United Kingdom. These corporations are known as the British Overseas Airways and British European Airways. The story of the progress of flying and the development of the different types of aeroplane is told in **5**, 231 *et seq.*
Pictures: A Modern Air Liner, **5**, 231
Brabazon I Takes the Air, **5**, 232
A Vickers "Viking" Passenger Air Liner, **5**, 233
For Short-range Transport Work, **5**, 234
Comfort in Travel, **5**, 235
The Bristol Helicopter, **5**, 236
A Three-seater Light Plane, **5**, 237
For Feeder Line Service, **5**, 238
The Bristol Britannia Airliner, **5**, 239
Aircraft Design of the Future, **5**, 240
Colour Plates An Airspeed "Ambassador" in Flight, **5**, *facing* 188
The de Havilland *Comet*, **5**, *facing* 189

Civilization. Term used to indicate a fairly advanced stage in the social development of a nation. It may be regarded as the opposite of savage though the exact dividing line between the savage and the civilized man would be difficult to define. Some knowledge of the arts and those manners and customs we call civilized, a certain consideration for others; these lead to an organization with rules and laws to govern conduct and thus a state of civilization is attained.
Egypt was the home of the first civilization known to exist in the world and had become a highly civilized state 7,000 years or more ago. See *Great Nations of the Past*, **9**, 1 *et seq.*

Civil Service is the term applied to the body of non-combatant officials employed by the Government to administer the affairs of the nation, **9**, 62, 66

Civil Wars, The. This is the title given to the conflict between Royalists and Parliamentarians in the seventeenth century. The First Civil War (1642–46) ended with the destruction of the Royalist army at Naseby (1645) and the surrender of King Charles I to the Scots at Newark. The Second Civil War (1648–49) ended with the trial and execution of Charles, **2**, 407

Clackmannan is the county town of Clackmannanshire, Scotland. It is a centre of coalmining and other industries, **3**, 121

Clackmannanshire lies north of the Forth and south of Perthshire, with Stirlingshire and Fifeshire at its sides. It is Scotland's smallest county and is rich in coal.

Clacton-on-Sea. Popular seaside and residential resort on the Essex coast, 67 miles from London, **3**, 60

Clam. Name given to large bivalve molluscs. They are found among coral islands and have vivid colouring.

Clamp is the name given to an opening made in the ground and lined with straw. In such a pit potatoes and other root crops are placed, to be covered with more straw and then soil, **6**, 391

Clangour means a sharp, hard ringing sound, like that produced by the crashing together of two metal bodies.
The words clink, clack and clank come from the same root.

Clapperboy. One of the assistants in the making of a film. He signals by striking a stick on a board, **9**, 255

Clare is a county in the Province of Munster, Eire. It has important fisheries.

Clare, John (1793–1864). An English poet, he wrote particularly of country life.
Poem: The Thrush's Nest, **9**, 96

Clare College, Cambridge. The college is much older than its present buildings which date from the period 1638–1715.
Picture: **3**, 67

Clarence, Duke of. One of the most notable dukes bearing this title was the third son of King Henry IV who named Mont Orgueil Castle in the Channel Islands.
Picture: **3**, 53

Clarence, Duke of (1864–92). Prince Albert Victor, he was the eldest son of Edward VII and Queen Alexandra. His early death made Prince George heir to the throne, **2**, 229

Clarendon, Edward Hyde, First Earl of (1609–74). An English statesman who supported King Charles I in the House of Commons and played a major part in bringing about the Restoration (*q.v.*), after which he was King Charles II's chief adviser for a time. He died in exile at Rouen, **2**, 166, 169

Clarias are fish found in fresh water pools in tropical countries.

Clarinet. This musical instrument finds a home in the orchestra, but is also used for solo work. It is a wood-wind instrument with a cylindrical bore and is played with a single-reed mouthpiece. It depends for the production of its scale on lateral holes, limited to twenty or twenty-two.
See *Orchestra.*

Clark, Cosmo, is a contemporary British painter of the Impressionist School.
Photo-tone Supplement: Watching the Sailing at Hammersmith Mall, **7**, *between* 112 and 113

Clarke, Marcus (1846–81). Though born in London, this novelist is identified with Australia. He wrote *For the Term of his Natural Life*, a tale of convicts who had been transported.

Clarkia. One of the gayest of the hardy annual plants, **8**, 278
Picture: **8**, 272

Clarkson, Thomas (1760–1846). Born at Wisbech, Cambridgeshire, he was a leading figure in the movement to abolish slavery, **2**, 183

Classical means something relating to the ancient Greeks and Romans. The classical languages, *i.e.*, Greek and Latin, are not now taught in schools as much as formerly
The word has also the wider meaning of first-rate, or of the highest class.

Clausen, Sir George (1852–1944). A great English painter, he is best known for his pictures of farmers and farm hands, **7**, 111
Picture: Guiding the Plough, **7**, 117

Clavichord. An old keyboard stringed instrument which preceded the piano. The strings were struck by upright metal wedges called "tangents." It was for this instrument that Bach composed a set of 24 preludes and fugues which became famous, under the title "Das Wohltemperirte Clavier," **7**, 159
See *Musical Instruments*

Clavicytherium. An old musical instrument which was a forerunner of the pianoforte, together with the clavichord, harpsichord and spinet. The name is applied to an upright spinet, but its strings were placed horizontally. See *Musical Instruments.*

Clavius is the name given to an extensive plain on the surface of the moon, 142 miles in diameter. There are two other wide plains, Grimaldi and Schickard, which are respectively 138 and 133 miles in diameter, **8**, 138

Clay. In a gardening sense, stiff, reddish earth. It is good for roses and is most productive when well worked, **8**, 271; **9**, 316
Picture: Cornish Clay Pit, **9**, 197

Clayton-le-Moors is a town of Lancashire interested chiefly in cotton

Cleavers. Another name for the wild plant known as clivers (*q.v.*).

Cleckheaton is one of the woollen towns of the West Riding of Yorkshire.

Cleethorpes is a seaside town and holiday resort of Lincolnshire. It adjoins Grimsby.

Cleis was daughter of the Greek poetess Sappho, **7**, 121

Clematis. One of the finest of climbing plants. There are many different types, but they all do best when trained over an arch, pergola or rustic porch

Clemens, Samuel Langhorne (1835–1910). An American humorist whose fame is world-wide. As "Mark Twain," he wrote *Tom Sawyer* in 1876, **7**, 221, 271
Pictures: Mark Twain, **7**, 222
Tom Sawyer and Huckleberry Finn, **7**, 223

Cleobulus was tyrant of Lindos and one of the Seven Sages of Greece. His tomb can still be seen on the island of Rhodes.
Picture: **4**, 161

Cleomedes. Name of an astronomer who lived some 2,000 years ago. He believed the earth to be round, **8**, 132

Cleopatra (*c.* 68–30 B.C.). Became Queen of Egypt in 51 B.C. jointly with her younger brother Ptolemy XII. She fascinated both Julius Cæsar and, later, Mark Antony. This led to war with Rome, and at the battle of Actium Cleopatra's ships were put to flight (31 B.C.). Next year Antony and Cleopatra were driven back to Alexandria. On a report that Cleopatra was dead, Antony slew himself. Cleopatra, facing defeat, died by her own hand by placing an asp in her bosom.

Cleopatra's Needles. Two Egyptian obelisks originally set up at Heliopolis about 1,500 B.C. One is now on

the Thames Embankment, London, and the other in Central Park, New York City, U.S.A., **9**, 323
Picture: **3**, 22

Clerestory means a row of upper windows above the main part of a building. Such windows are often seen in ancient churches.

Clerical means something having to do with clerks or clergy. Clerical work, such as writing letters and keeping accounts, is that done by clerks; but when we speak of the clerical profession we mean the clergy who are "clerks in Holy Orders."

Clerk-Maxwell, James (1831-79). Distinguished British scientist whose experiments in connection with electric waves marked a great step towards the development of wireless telegraphy, **7**, 370, 409

Clermont was the name of the first steamship to carry passengers. It was put into service on the East River, New York, in 1807, **5**, 119

Clevedon, on the Bristol Channel, is a small seaside resort of Somerset.

Cleveland Bay. A breed of fast trotting horse brought into being during the coaching era, **1**, 97

Cleveland Hills is the name given to an area of very high ground in the North Riding of Yorkshire. The district is rich in ironstone, **3**, 81

Click Beetles. Insects of the *Elateridæ* family. Their larvæ are the pests known as wireworms.

Clifton is a suburb of Bristol. It has a zoological gardens, a famous public school for boys and a suspension bridge.

Clifton Bridge is a single huge arch which spans Niagara River below the Falls, **5**, 49

Clifton Suspension Bridge crosses the River Avon, linking Somerset with Gloucestershire. The roadway is 300 ft. above the river.
Picture: **3**, 56
Photo-tone Supplement: Bridges, Big and Little, **5**, *between* 64 and 65

Climax means the highest point. A story reaches its climax at the point of highest interest. Things are said to come to a climax when a condition has been brought about which can last no longer and a decision of some kind must be made.

Climbing Perch. A fish found in India, Burma and Ceylon. It can actually ascend the trunks of trees, **1**, 213

Clipper. Name given to a famous type of sailing ship, specially designed for speed around 1850-70 and mainly engaged in the Chinese tea trade, **8**, 29
Picture: Cutty Sark, **8**, 33
Colour Plate: A Clipper on the Homeward Run, *Frontispiece*, Vol. **8**

Clitheroe is a town of Lancashire, standing on the River Ribble. It is interested in cotton.

Clive, Robert, Lord (1725-74). Born near Market Drayton, Shropshire, he went as a clerk to India, but became a soldier and proved himself a born leader, **2**, 184 *et seq.*, 409; **3**, 311
Pictures: With Clive in India, **2**, 185
The Defence of Arcot, **2**, 186
The Hour of Decision, **2**, 187

Cliveden. The name of a beautiful mansion in Buckingham that was given in 1947 to the National Trust by Lord and Lady Astor. Their gift included a beautiful stretch of country on the banks of the Thames, **3**, 413

Cliveden Reach. A beautiful stretch of the Thames in Buckinghamshire.
Picture: **3**, 407

Clivers. A hedgerow, climbing and rambling plant. Its seeds are hooked so that they may be carried about by animals, **1**, 305
Picture: **1**, 370

Clivia is the name of an evergreen climbing plant grown in greenhouses. It is also known as the Kaffir lily and is a native of South Africa.

Cloches, as used in gardens, were originally bell-shaped glasses, named from the French word cloche, a bell. Modern cloches are glass-sided covers to protect or force the growth of plants.
Picture: **1**, 388

Clocks and Time Recorders. Perhaps one of the earliest desires of mankind was to have some means of measuring time. Even in Biblical days there is mention of the sundial, and other methods of measuring the hours were the sand-glass, the candle-clock, and the water-clock. Mechanical clocks were in use early in the twelfth century. See *Our Clocks and Watches*, **9**, 219 *et seq.*
Pictures: A Collection of Aged Clocks, **9**, 219
Antique Clocks and Watches, **9**, 221
A College for Clock Makers, **9**, 222
Putting Them Together, **9**, 223
The Time-Signal Clock, **9**, 224
Four Famous Clocks, **10**, 85
Colour Plate: Time Recorders of the Past and Present, **9**, *facing* 224

Cloisonné Work consists of outlining designs by small strips of metal and filling the space between these with an enamel paste. The Chinese are very skilled in this art.
Picture: **4**, 231

Cloister means a vaulted walk surrounding a quadrangle in the buildings of a cathedral, abbey or monastery. A cloister is open on one side. In olden times monks took exercise, washed, and, in some cases, worked in the cloisters.

Cloncurry is an important mining centre of Queensland, Australia. The Cloncurry Field is the most important copper deposit in this state.
Pictorial Map: **3**, 243

Clonmel is a town and market centre of Tipperary, Eire. It stands on the River Suir.

Close is the name given to an enclosed space, especially the space immediately surrounding a cathedral, college or abbey.
The word also means a narrow passage or entry leading off a street from which there is no further exit.

Close Time, or season, is the period during which game, as well as certain wild birds and fish, may not be shot or caught, **9**, 338

Close-up. In the language of the maker of films for the cinema, a "close-up" is a photograph of an actor or actors taken with the camera as close as possible.
Picture: Taking a Close-up, **9**, 253

Clothes-Moth. See *Moth, Clothes*.

Cloud Piercer, The. This is the name Maoris give to Mount Cook in the South Island of New Zealand, **3**, 254
Picture: **3**, 253

Clouds appear in the skies in three main forms, cirrus, cumulus and stratus, **5**, **9**, 16–18; **9**, 350
Pictures: The Riddle of the Sky—Trailing clouds follow the plane, **5**, 4
Clouds of Different Types, **5**, 8 and 9
Thunder threatened, **5**, 10
A Remarkable Cloud Formation, **5**, 26

Cloud's Cottage is in the village of Bovington in Dorset. It was the home of Lawrence of Arabia, **3**, 413

Clove is the name given to a variety of garden pink because its blossoms have something of the fragrance of cloves.

Clovelly. A seaside resort of North Devon. It is famous because its one main street rises in steps 400 ft. from the sea.

Clover. Plants belonging to the trifolium family, each leaf being formed of three leaflets. Flower heads are made up of florets, **1**, 301; **6**, 324
Colour Plate: Red Clover, **1**, *between* 304 and 305 (Plate 2)

Cloves are used for flavouring and as a spice. They are the flower buds of the clove tree. Most of the world's cloves are grown in Zanzibar and Pemba, **3**, 374 *et seq.*
Picture: **3**, 376

Clovis. He was the leader of the Franks and became their king in A.D. 418. He conquered territory as far south as the Pyrenees and founded the city of Paris. He was converted to Christianity and died in 511, **4**, 6

Club-Mosses. A form of plant-life that once reached a height up to 100 ft. and over, **6**, 2
Picture: **1**, 3

Clunes is a town in the state of Victoria, Australia, and one of the goldmining centres discovered in the last century, **3**, 205

Clun Forest. This is the name of a wooded mountain block overlooking the Upper Severn, **3**, 102

Clwyd. A river of North Wales with a beautiful valley at whose sea end is Rhyl, **3**, 106

Clyde. A river of Scotland, it has been dredged so that ocean liners can enter the port of Glasgow. It flows into the Firth of Clyde and is more than 100 miles in length, **3**, 112 *et seq.*, 105
Picture: **3**, 107

Clyde, Lord (1792-1863). A famous British soldier. As Sir Colin Campbell he commanded the British forces engaged in quelling the Indian Mutiny in 1857.

Clydesdales are heavy draught horses to be found largely in Scotland. They are the counterpart of the English Shire Horse, **1**, 97

Clypeus is the hard, horny shield found on the front of the heads of many insects. It is the clypeus which protects an imprisoned bee or wasp from damage when it hurls itself against a window-pane.

C.M.B. means Coastal Motor Boat.

cm. means centimetres.

C.M.G. means Companion of the Most Distinguished Order of St. Michael and St. George.

Cnossos was the capital of the island of Crete in the days of the Minoan civilisation there. Here can be seen the remains of the wonderful palace of King Minos which was burnt and sacked about the year 1400 B.C., **2**, 402; **4**, 158
Picture: **4**, 161

C.N.R. These initials stand for Canadian National Railways. The C.N.R. New Central Terminal is the new, large railway station in Montreal, **3**, 180, 185

Cnut. See *Canute.*

C.O. means Commanding Officer.

CO_2 is the abbreviation for carbon-dioxide or carbonic acid gas. This gas is produced by our bodies during respiration, **8**, 218

Co. means county, as in Darlington, Co. Durham to distinguish the county from the city of Durham.
Co. is also used for Company, *i.e.*, J. Wilson & Co.

C/o means "care off."

Coaiti. An animal of the New World, also known as the Spider Monkey. It uses its tail as another limb, **2**, 339
Pictures: Spider Monkey, **1**, 101
Making Pets of the Monkeys, **2**, 339

Coal is composed mainly of carbon in the form of fossilised vegetation, which has been hardened by the pressure of successive layers of earth. The story of its formation and the way in which it is mined is told in *The Story of a Lump of Coal*, **6**, 1 *et seq.*
—What is Coal? **9**, 316
—The effect of its adoption on the population of England, **9**, 325
—If Coal could Burn in the Skies, **5**, 91
Pictures: A Modern Colliery in Scotland, **6**, 1
In a Seam of Coal, **6**, 2
A Lighter Formation, **6**, 3
All Found in One Seam, **6**, 4
Coal of Varying Structure, **6**, 5
Boring for Coal, **6**, 6
Sinking through Soft Sand and Water, **6**, 7
Digging the Shaft of a Coal Mine, **6**, 8
Lining a Mine Shaft, **6**, 9
The Present Sources of Coal, **6**, 10
Coalfields of Elizabethan Times, **6**, 11
Scotland's Newest Coal Mine, **6**, 12
Colour Plate: Above and Below Ground at a Colliery, **6**, *facing* 36
See also *Coal and its By-products* and *Miner, A Day in the Life of a.*

Coal and its By-products. In addition to fuel, coal provides us with useful by-products, such as gas, coke, tar, plastics, and many others. This is the wonderful result of research and experiments, which are still proceeding. What we owe to coal, **6**, 13 *et seq.*
Pictures: Coal and its By-products, **6**, 13
Dyeing Knitted Fabrics, **6**, 16
Sheep-clipping, **6**, 17
The Treasure in Coal, **6**, 21

Coal Mines. Why explosions occur, **9**, 302
—Why canaries are taken into mines, **9**, 302
See also *Miner, A Day in the Life of a*, **6**, 23 *et seq.*

Coalbrookdale is a town of Shropshire. Here a foundry for making cast iron was established in 1709, **6**, 49

Coal-gas is a mixture of carbon and hydrogen obtained from coal, **6**, 13

Coal measures is the term applied to a series of seams of coal separated by clay, shale and sandstone, **6**, 3

Coal-Tar is a by-product of the gas-works. It is used in the production of certain scents and for the production of coal-tar oils which have varied uses in industrial processes relating to motor benzol, dyes, plastics, artificial silk, etc., **6**, 274, 275, 369

Coal Tit. See *Titmouse.*

Coarse Fishing. This term is used to denote angling with rod, line, and bait for "coarse" fish—any fresh-water fish except salmon, trout, char and grayling, **8**, 246

Coastal Motor Boats are fast small vessels which can spurt at 46 miles an hour. They are used as torpedo boats, **5**, 267

Coast Guards, now known as the Coast Watching Service, carry out various duties, chief of which is life-saving.

Coatbridge, Lanarkshire Scotland, is a centre for coal-mining blast furnaces and other heavy industries, **3**, 121

Coates, Eric (born 1887). British musician. He composed the famous "London" Suite and "The Three Bears," **7**, 190
Picture: **7**, 194

Coat of Arms. Armorial bearings of an individual, family, kingdom, borough or corporation, composed of charges or devices depicted on a shield. See also *Heraldry.*
Picture. **10**, 89

Cobalt. A mineral of a reddish-grey or greyish-white colour which is never found in a pure state, but as ore combined with iron or arsenic.
It is used to give a lasting blue colour to glass and for enamel work on metals, porcelain and earthenware **9**, 204

Cobalt is a silver and cobalt mining centre in the province of Ontario, Canada, **3**, 196

Cobb, John (1900-52). Famous British racing motorist who set up many land speed records. He was killed when attempting to beat the world water speed record in his jet-propelled speed-boat *Crusader* on Loch Ness, Sept., 1952, **5**, 176
Picture; Railton Racing Car, **5**, 171

Cobbett, William (1762-1835). English writer. One of his best-remembered works is *Rural Rides*, an account of a tour through England.

Cobbler, The. A craggy height overlooking Loch Long, Argyllshire, Scotland.
Picture **3**, 129

Cobden, Richard (1804-65). Known as the Apostle of Free Trade, he was chief agent in the repeal of the Corn Laws, **2**, 220

Cobham, Sir Alan John (born 1894). An airman who has become famous for his long flights. In 1926 flew from England to Australia and back and completed the circuit of Africa. He ranks as a pioneer of aviation, **2**, 242

Coblenz is a German manufacturing town on the Middle Rhine. It is a centre of the wine industry, **4**, 70

Cobra, Indian. A poisonous snake which swells out its neck or hood, **1**, 144
Pictures: **1**, 144

Cob Walls are made from clay prepared in wooden moulds, **7**, 286

Cocanada is the capital and seaport of the district of Dodavari, Madras, India.

Coccosteus. An extinct fish.
Colour Plate: **1**, *facing* 36

Cochin-China is a state of Indo-China and a part of the Viet-Nam Republic. Its chief town is Saigon which is also the seat of French government and the principal port of Indo-China, **4**, 212
—visited by Marco Polo, **2**, 269
Picture: **4**, 212

Cocibolca was the Indian name for Lake Nicaragua, **4**, 304
See also *Nicaragua.*

Cockatoo. Bird of the parrot tribe found in Australia and the Molucca Islands. It is noted for its vivid colouring and harsh cry.
Picture: **1**, 198
Photo-tone Supplement: Wild Life in Australasia, **1**, *between* 336 and 337

Cockatoo Island, in Sydney Harbour, New South Wales, is a ship repair and shipbuilding centre, **3**, 240

Cockatoo Island is in Yampi Sound, in the Buccaneer Archipelago off the north-west coast of Western Australia. It is largely composed of iron ore and is now being worked, **3**, 238

Cockchafer. A black insect belonging to the family of scarab beetles. Often known as the May-bug, it is a serious pest to farmers.

Cockermouth is a town of Cumberland. Here the poet Wordsworth was born.

Cockington. Name of a famous village near Torquay, South Devon.
Picture: **3**, 48

Cockle, a mollusc having a heart-shaped shell which lives buried in mud or sand, **1**, 228
Pictures A Fossil Shell, **1**, 11
A Cockle Shell, **1**, 228

Cockpit. The part of an old man-of-war used as a hospital for the wounded during a fight. The word now signifies the space in which the pilot of an aeroplane sits; or the well-like open space in a small sailing-boat below the general level of the deck.

Cockpit of Europe. The name given to the Low Countries (Holland and Belgium) because so many wars have been fought across their soil, **2**, 235; **4**, 19

Cocoa has been used in this country since 1656. It is obtained from the seeds of a small tree known as the cacao. The fruits are large; and, when opened, yield their beans or nibs. These have afterwards to be roasted and milled when the large amount of oil they contain causes a viscous liquid, cocoa butter, to be formed. Cocoa powder consists of bean *minus* some of the cocoa butter. Chocolate contains full butter content *plus* extra cocoa butter added to compensate for increased bulk due to addition of sugar. Most of the raw material comes from the Gold Coast, **3**, 380; **4**, 384

Pictures: A Cocoa Farmer at Work, **4**, 376
Splitting Cocoa Pods, **4**, 377
A Gold Coast Cocoa Farm, **4**, 378

Coco-nut. There are about thirty separate sorts of coco-nut palm, the most useful to man of all trees. It yields nuts; oil or coco-nut butter; coco-nut matting; sugar; and a valuable wood. Grown in the tropics, **1**, 310

—how the seeds travel, **1**, 369
Pictures: Coco-nut Palms, **1**, 309
Native Climbing Tree, **1**, 309
Sprout of a Coco-nut, **1**, 310

Cocoon. A silken case for the reception of a chrysalis as made by moths, silk moths and some butterflies, **1**, 249
See *Silkworm.*

Cocos Islands are in the Indian Ocean. They were part of our colony of Singapore until 1951 when they were transferred to Australia. Also known as the Keeling Islands, **2**, 346; **3**, 388

—Pirate treasure buried here, **8**, 54
Picture: The Treasure of Cocos Island, **8**, 55

C.O.D. means cash on delivery. Often used by stores and shopkeepers as an instruction to their carmen to collect cash for goods as they deliver them. Further used for a postal and railway system under which one may order goods and pay the postman or van-man on delivery.

Cod. A very valuable food fish, it is largely found off Newfoundland and in the North Sea. The average length is about 3 ft.

Code means a collection of laws drawn up according to an ordered plan. The Code Napoleon, formed by the great general in 1804–10, is the basis of law in France.

Cod End is the name fishermen give to that part of their net which is untied so that the catch may fall through on to the decks, **8**, 76

Codex. Term used to describe any ancient MS. in book form. Books written on papyrus were generally in roll form, but the book form developed after vellum was invented and examples are traceable to the second century B.C. The most famous examples of the Codex are the two oldest manuscripts of the Greek Bible the Codex Sinaiticus (*q.v.*) and the Codex Vaticanus, the first is in the British Museum and the second in the Vatican, Rome.

Codex Sinaiticus. Manuscript of the Greek Bible, one of the two oldest in existence. It was evidently written not later than A.D. 340 and the manuscript was discovered in the monastery of St. Catherine at Mount Sinai in 1844 by a German scholar, Tischendorf. It was sold to the Tsar of Russia. Later it was offered to the British government and in due course was bought for the British Museum in 1933 for the sum of £100,000.

Codford St. Mary, is a Wiltshire village with some picturesque thatched cottages.
Picture: **3**, 79

Cod Liver Oil is obtained from the fresh liver of cod fish.

Codrus (about 1060 B.C.) the last of the kings of Athens, **2**, 17
Picture: **2**, 17

Cody, Samuel Franklin (1862–1913). An experimenter in man-lifting kites, he made a practical flying machine, **5**, 194
Picture: **5**, 192

Cody, William Frederick (1846–1917). American scout and showman, better known as Buffalo Bill. Rider in a mail service known as the Pony Express, he afterwards conducted a famous wild west show.

Coffee is a drink made with water and the roasted, ground beans of the coffee plant. This plant is grown in many parts of the world, and in the Central American republic of El Salvador its cultivation is the main industry, **4**, 302, 312; **9**, 412
Pictures: On a Coffee Plantation, **4**, 302, 317
The Coffee Exchange, Santos, **4**, 321

Coiled Indian Stitch is a method of sewing used in Indian basketry, **8**, 387
Picture: **8**, 388

Coin Cabinets are essential to collectors. How to make one, **8**, 297

Coins form the subject of most interesting collections. The science of coins is called numismatics, **8**, 291 *et seq.*
used as money, **9**, 353
Pictures: Greek coins, **8**, 291, 292
Roman coins, **8**, 293, 294
Gaulish, British and English coins, **8**, 295
English coins, **8**, 296
English gold coins, **8**, 297
A crown and a groat, **8**, 298
English coins, Charles II, **8**, 299
Twopenny piece to Maundy Penny, **8**, 300
English coins of recent times, **8**, 301
Irish coins, **8**, 302
Scottish coins, **8**, 303
A Scottish Bonnet-Piece, **8**, 304
A Ducat and a Bawbee, **8**, 305
Coins of James VI and later, **8**, 306
Colonial Coins, **8**, 307
Colonial and U.S.A. coins, **8**, 308
History on coins, **9**, 355

Coir is a kind of yarn manufactured from the husk of coconuts and made into ropes, sailcloth, brushes and matting. It is able to resist the action of salt-water.

Coke is coal from which much of the gas has been taken. It is used in stoves and boiler furnaces and for smelting iron, **6**, 14, 266

Colchester. A market town of Essex. It is noted for its oysters, and holds an annual oyster feast, **3**, 60, 65

Coldstream Guards is the name given to a regiment of Foot Guards in the British Army. Founded in 1650, the regiment takes its name from the Berwickshire town of Coldstream.

Coleford, Gloucestershire, is in a coal-mining district. It is a centre for the Forest of Dean.

Coleoptera. Name given to the group of insects to which beetles belong.

Coleraine is a town and port of County Londonderry, Northern Ireland. It is a centre of the linen trade, **3**, 144

Coleridge, Hartley (1796–1849). An English poet, he was a son of Samuel T. Coleridge. His *Sonnets* are particularly well known.

Coleridge, Samuel Taylor (1772–1834). Author of *Kubla Khan* and *The Ancient Mariner*, he was the son of a Devonshire clergyman, **7**, 142

—one of the Lake Poets, **3**, 88
Picture: **7**, 142

Coleridge-Taylor, Samuel (1875–1912). British musical composer, son of a West African Negro doctor and an English mother, he was born in London. He achieved wide fame with his piano, orchestra and chamber pieces, **7**, 189

Cole Tit. See *Coal Tit.*

Coleworts are miniature hearting cabbages, to be planted a foot apart in late summer. They are ready for use in the depth of winter.

Coll is an island of the Inner Hebrides.

Collaborator. One who collaborates or works with another. The two Grimm brothers were collaborators in the production of their famous book of fairy tales

Collaroy is a popular bathing-beach of Sydney, Australia, **3**, 231

Colleague means a fellow-worker. The masters at a school, the directors of a railway company or the officials of a Government department are colleagues.

Collective Farm is farm consisting of former small farms which have now been grouped together to permit the use of labour-saving machinery which, with fertilisers and seeds, is supplied by the State. Collective farms are a feature of the Soviet Union (Russia), especially in the Ukraine. They are called kolkhozes, **4**, 118 *et seq*
Pictures: A maize crop on a Collective Farm, **4**, 109
Lunch-time on a Collective Farm, **4**, 119
Ukrainian Harvest, **4**, 121
Grain from the Collective Farms, **4**, 122

Collectors' Stamps is the name given to stamps printed specially to sell to collectors and not for genuine postal use, **4**, 405

Collie is a coal-mining town of Western Australia, **3**, 236
Pictorial Map. **3**, 242

Collie. Name of a breed of most intelligent dogs. They are often used as sheep dogs.
See *Dogs as Pets.*

Collier. A ship for carrying coal; a coal miner. Some ships are built specially for taking coal cargoes and equipped with apparatus to ensure rapid unloading.

Collingwood was the name of the naval vessel on which King George VI served in the early days of the war of 1914–18, **2**, 243

Collingwood, Lord (1750–1810) was a famous British sailor who took part in the Battle of Trafalgar and assumed command on Nelson's death. He remained on active service till his death at sea.

Collins, William Wilkie (1824–89). His friendship with Charles Dickens induced him to embark on a literary career. Wrote *The Woman in White*, *The Moonstone*, and other novels.

Collins Street is one of the best-known thoroughfares in the city of Melbourne, Australia, **3**, 232
Picture: **3**, 235

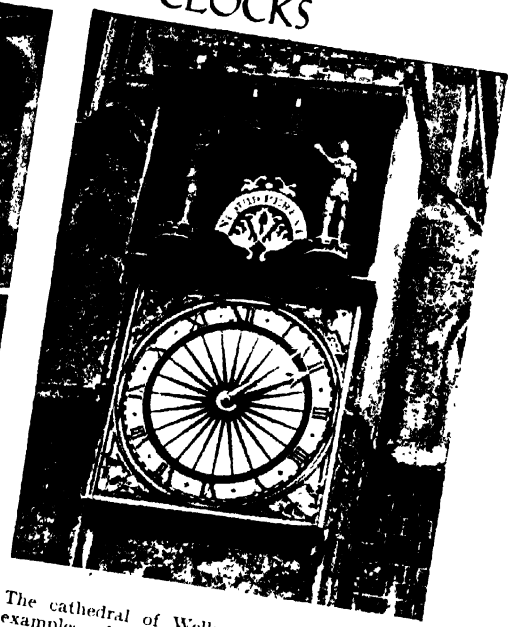
Collodion is a thick, colourless liquid prepared by dissolving cellulose in

FOUR FAMOUS CLOCKS



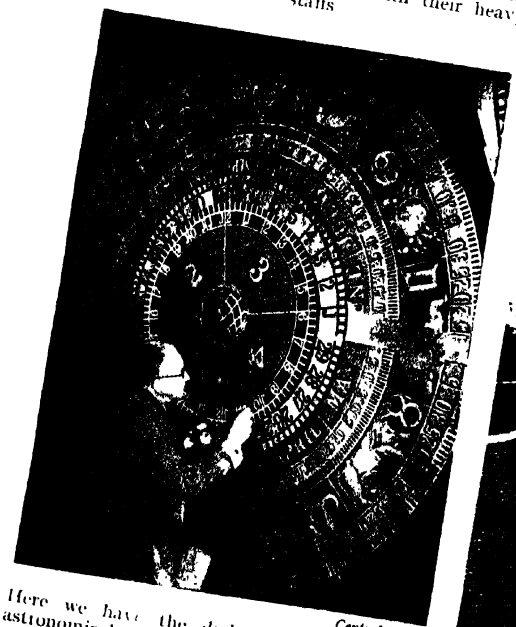
Topical.

A well-known London striking clock (see p. 82) is the one seen above. It is outside the Church of St. Dunstan's-in-the-West, Fleet Street. The two figures strike the bells with their heavy staffs



Topical

The cathedral of Wells is one of the finest examples of Early English architecture, and Jack Blandiver's Clock, seen above, with its armoured knights and bells above is among its many remarkable features.



Central Press.

Here we have the dial of the remarkable astronomical clock at Hampton Court, undergoing renovation. The clock not only tells the time, but gives astronomical information. It was made in 1540.



Daily Graphic

The famous clock which gives the time to many through Big Ben's chimes is kept accurate by nine pennies and one halfpenny on the pendulum flange. A penny less would lose four-tenths of a second a day.

alcohol and ether. On being exposed to the air, the spirits in it quickly evaporate, leaving a tough film behind.
One of its uses is to protect wounds from air and germs.

Collumpton, Devon. A small town standing on the River Culm, it has woollen industries.

Colne. (1) A river of Essex. At its estuary are the oyster beds associated with Colchester, 3, 60
(2) A small river joining the Thames at Staines. It divides Middlesex from Buckinghamshire and gives its name to the village of Colnbrook, 3, 25

Colne. An important cotton town in Lancashire, thirty-four miles north-east of Manchester.

Colobus, White-thighed. See *White-thighed colobus.*

Cologne. A German city on the River Rhine and a great commercial and industrial centre with a very beautiful cathedral. It was the objective of the first Allied air raid in which 1,000 aircraft were used (1942), 2, 253; 4, 71
—Caxton studied printing here, 2, 157
Pictures: 4, 68, 69, 70

Colombia is a republic of South America and is an important producer of mild coffee. It has great mineral wealth, especially gold, silver, and emeralds. It also has great timber resources. The population numbers over 10 millions. The capital is Bogota, 4, 330, 394
Pictures: The Market at Popayan, 4, 333
Scenes in Colombia, 4, 334

Colombo is the capital of Ceylon and the island's principal port. It has many fine buildings, 3, 363
Pictures: Modern Government Buildings at Colombo, 3, 361
Ceylon becomes a Dominion, 3, 363

Colon is the capital of Colon province in the republic of Panama and stands at the Atlantic entrance to the Panama Canal, 4, 305
Picture: 4, 308; 5, 60

Colonise means to people a country with colonists. What are now the United States of America were in the first instance colonised by the English on the east coast and by the French on the Gulf of Mexico.
Colonists have to begin by cultivating the new lands as farmers.

Colonsay is an island of the Inner Hebrides.

Colorado is the name of a river of the U.S.A. about 1,800 miles in length. It flows through deep, narrow valleys called canyons. There are two other rivers of the same name, one in Texas, U.S.A., and the other in the Argentine, 2, 353; 4, 272, 273

Colorado is a state of the U.S.A. Its agriculture is important and it produces a large sugar beet crop. It has extensive mining interests, especially in coal. The state capital is Denver.
—it has remains of fossilised reptiles, 1, 26
Pictorial Map: 4, 291

Colorado Beetle. A small, oval insect, dark with longitudinal stripes. It is a menace to agriculture, particularly potato crops.
Picture: Fighting a Pest, 1 389

Colosseum. This is the name of a famous ruin of ancient Rome still to be seen in the Italian capital. It is a vast amphitheatre which, when it was built, could hold 45,000 people to watch the gladiatorial contests and other grisly entertainments that went on in its arena, 4, 152
Picture: 4, 141
Colour Plate: 7, *between* 336 and 337

Colossus at Rhodes. A great statue, said to have been 120 ft. in height, one of the Seven Wonders of the Ancient World, 4, 158; 7, 292
Picture: 7, 286

Colour. The colour of an object is an arrangement of its atoms which enables it to reflect or pass through it light-waves of a certain colour.
—how colour affects flowers, 5, 106
Pictures: How Colour affects Flowers, 5, 108

Colour Printing. The camera has been mainly responsible for the big developments which have taken place in the reproduction of colour pictures in our modern magazines and books. The method employed is generally known as the three-colour process.
Colour Plate: How the Camera Helps to Reproduce Colours, 7, *facing* 369

Colt. The name given to a young horse, 1, 95

Coltness Gem. A dwarf bedding type of the plant Dahlia.

Coltsfoot. A plant belonging to the daisy family. It was once regarded as a remedy for colds, 1, 301
Colour Plate: 1, *between* 302 and 305 (Plate 1)

Columbia, with cotton mills and other industries, is capital of the State of South Carolina, U.S.A.

Columbia. A river of the U.S.A. which forms, for part of its course the boundary between the States of Washington and Oregon and flows into the Pacific Ocean. Its waters are harnessed by the Bonneville and Grand Coulee Dams, 4, 293

Columbia, British. See *British Columbia.*

Columbia, Cape. A promontory on the coast of Grant Land which is a part of Ellesmere Island, to the far north of Canada, 2, 359

Columbia, District of. This is a small area of the United States which contains Washington, the capital of that country. *Abbrev.* D.C., 4, 268
See also *Washington.*

Columbia Icefield in the Canadian Rocky Mountains covers an area of over 110 square miles, and is the largest body of ice outside the Arctic Circle. It is often called "the Mother of Rivers" because from its great glaciers come the streams that become mighty rivers.
Pictures: 3, 188
Photo-tone Supplement: Among the Canadian Rockies, 3, *between* 160 and 161

Columbine is the popular name for the perennial plant *Aquilegia* (*q.v.*).

Columbus, a great trade centre, is capital of the State of Ohio, U.S.A.

Columbus, Bartholomew. An Italian navigator, he was a brother of Christopher Columbus. He visited the courts of England and France on his brother's behalf, 2, 275

Columbus, Christopher (1436–1506) Born at Genoa, he was wrecked off the coast of Portugal and settled there. On his first voyage to the New World he landed on Watling Island in the Bahamas and also discovered Hispaniola and Cuba. Later he made three more voyages, reaching the mainland of South America, 2, 273 *et seq.*, 406; 3, 395; 4, 132, 149, 307
Pictures: At the Council of Salamanca, 2, 273
Columbus before Ferdinand and Isabella, 2, 274
An Old-time Ship Rebuilt, 2, 275
The Four Voyages of Columbus, 2, 277
Watling Island, 2, 277
The Landing of Columbus, 2, 279
A Nation's Hero in Chains, 2, 280
Columbus Peers out to Sea, 4, 134
The Columbus Monument, Buenos Aires, 4, 324
Colour Plate: Columbus nears his Goal, 2, *facing* 149

Colwyn Bay is a holiday resort of Denbighshire, 3, 108
Pictures: Scenes at a National Eisteddfod, 3, 99

Colza is an oil obtained from the seeds of rape, a species of cabbage, used for burning in lamps and for lubrication.

Comayagua is a town of Honduras in Central America.

Comb. An interior portion of a hive of honey bees made up of six-sided cells, 1, 259
Pictures: In the Beehive, 1, 261
The Comb of the Honey Bee, 1, 262

Combe Martin is a holiday resort of North Devon within easy reach of Ilfracombe.

Combination Act (1799) forbade trade unions and strikes. It was repealed in 1822, 2, 410, 411

Combine Harvesters are farming machines which perform several harvesting tasks at one time. One type of combine harvester, for example, does simultaneously all operations from cutting to threshing.
Pictures: Harvesting in the Modern Style, 3, 59
Harvest in the Western Plains, 3, 176
Harvesting in Australia, 3, 221

Combustible means something able to burn or easily set on fire. Most combustible substances contain a large amount of carbon, which combines readily with oxygen, or, as we commonly say, burns when set alight.

Comet. Name of the first British passenger steamer. She was built by Henry Bell in 1812, 5, 119
Picture: 5, 120

Comet. Name given to the de Havilland all-jet air-liner which represents the highest efficiency both in speed and comfort among modern transport aircraft. It covered 2,980 miles from London Airport to Tripoli, at an average speed of 450 miles an hour, and has set up other records since then.
Pictures: 5, 235
Colour Plate: de Havilland *Comet*, 5, *facing* 189

Comets. The word "comet" is derived from the Latin "coma" (Greek "Koma") a hair, from a supposed similarity between the "tail" of a comet and hair floating

in the wind. The comets are attendants of the sun, although their movements are not confined, like those of the planets, to the space occupied by the solar system. They are very much smaller than the planets, and it is estimated that there are 120,000 in the solar system. They were for long thought to foretell disastrous happenings. Their parabolic orbits are often of immense length. The appearances of "Halley's Comet" at intervals of about 76 years were correctly predicted by Halley, **8**, 163 *et seq.*
Pictures: Comets are merely Gas, **8**, 165
The Path of a Comet, **8**, 166
A Comet with Many Tails, **8**, 167

Comet Goldfish. One of the most beautiful of the species, **1**, 225
Picture: **1**, 225

Comfrey. A wild plant growing in a moist position. It may reach a height of 3 ft. and has large leaves. The buds unfold into curious flowers, the colour of which varies.
—as a plant used in making certain medicines, **1**, 333

Comino. One of the three islands which form the British colony of Malta in the Mediterranean. The other two are Malta and Gozo, **3**, 387

Commemorate means to keep in memory some past event. The guys carried about by children on Guy Fawkes' Day commemorate an event which happened on November 5th, 1605.

Commemorative Stamps. Postage stamps which recall some great and historical events.
Pictures: **4**, 407

Commercial means something belonging to commerce or trade; carrying on trade; depending on commerce. If you take up a commercial career you will work for a firm engaged in commerce.
London is the commercial centre of the world.

Commission means a number of persons appointed to carry out a certain business or task. To put a ship into commission in the Royal Navy is to equip it, man it and prepare it generally for service. An officer in the Royal Navy, Army or Air Force is spoken of as getting his commission when appointed.
The money or allowance given to somebody for transacting business for another is also called commission.

Commissioner Street is one of the main thoroughfares of the city of Johannesburg, **3**, 292

Commodity is the name given to an article of commerce; merchandise. We use it of some substance or article necessary to our every-day lives, such as wheat, sugar, wool, cotton or tea.

Commodore. A naval officer ranking above a captain, but below an admiral. The senior captain of a naval squadron. In the R.A.F. Air Commodore is the rank next above Group Captain.
The title is also given to the senior captain of a steamship line.

Common Law. See *Law*.

Commons, House of, is the name given as long ago as the fourteenth century to the assembly of representatives of the shires, cities and boroughs chosen to make the laws of the country.
Today the House of Commons consists of 640 members elected by the votes of the people throughout the country. The leader of the party which is numerically strongest becomes the Prime Minister and chooses other members to form his Government. The Chamber in which the House meets was destroyed by air raids in 1941, and a new Chamber was opened by King George VI in 1950, **2**, 251
—first met as representatives of the people in 1265, **2**, 404
Pictures: **3**, 17; **10**, 79
See also *Parliament*.

Commonwealth is the term applied to that period in our history (1649–60) between the beheading of Charles I and the accession of Charles II. Oliver Cromwell was the first Lord Protector and Richard Cromwell the second. In more modern times the word is used in the Commonwealth of Australia and the British Commonwealth of Nations, **2**, 407

Commonwealth Conference. This is a meeting of representatives of the governments of Britain and the self-governing Dominions of the British Commonwealth of Nations

Commonwealth of Nations is the name given to the association of peoples and nations grouped voluntarily with Great Britain, it also embraces the British Colonial Empire.
—how the Commonwealth developed, **2**, 218 *et seq.*
See also *Atlas Supplement*, end of this volume.

Common Wren. One of the smallest of British wild birds with brown plumage and bars of darker brown. It sings in winter.
Colour Plate: **1**, *between* 160 and 161 (Plate 2)

Commune. A small district of France or Belgium under the local government of a mayor and council.

Community means a body of people living under the same laws and rules; the people in general; the public. A religious community is one vowed to conform to certain rules of life.

Commutator. A device used on a dynamo for reversing the direction of a current. The revolving part of a dynamo sets up alternating currents. The commutator keeps these reversing at regular intervals, so that the current leaving the dynamo flows always in the same direction and becomes "direct" current.

Como is one of the beautiful Italian lakes on the Swiss Border.
Photo-tone Supplement: Land of the Eternal City, **4**, *between* 112 and 113

Comoro Archipelago are a group of French islands off the south-east coast of Africa about halfway between that coast and the northern tip of Madagascar.

Company of New France. This was the title of the organisation founded by Cardinal Richelieu during the seventeenth century to promote the interests of France in Canada, **3**, 156

Compass. Size, or distance round an object; a passing round or circuit; the limit or boundary of a space or area. Also, a mathematical instrument for describing circles, measuring figures and distances between two points, often called a pair of compasses. (*p.h.*)
The mariner's compass is a magnet so suspended as to have complete freedom of motion and used to indicate direction. Under the influence of the earth's magnetic force upon the needle, the north point marked on the compass card, which is attached to the magnet, is directed towards the magnetic north
—gyroscopic, **5**, 271 *et seq.*; **9**, 397
—boxing the compass, **9**, 397
—using a watch as a compass, **9**, 403
Picture: **10**, 93

Compiègne. A town of France in the department of Oise. In the nearby forest, the Germans surrendered after the First World War and in this same place, Hitler received the surrender of the French in the Second World War, **2**, 250

Compliment. Words or an act showing respect, politeness or admiration. We send a gift to another with our compliments—with the compliments of the season, at Christmas.

Composite means made up of different kinds or many parts. A composite style in architecture is a combination of two or more different styles.

Compositor. One who sets up printing type. Composing, in the sense of type-setting, may be done by hand or with the help of a machine. See *Newspaper*.

Compost Heap. An accumulation of soft garden rubbish, leaves and similar material allowed to rot for use as a fertiliser, **8**, 274

Compton Chamberlayne is a picturesque village in Wiltshire.
Picture: **3**, 78

Comstock Lode. Name of a great vein of silver and other minerals in the Sierra Nevada mountains, **6**, 102

Concave means having a hollow, rounded surface. The inner surface of a washing-bowl is concave, and its outer surface is convex. A lens which is concave on both sides must be thinner at the middle than at the edges.

Concepcion was the name of one of Magellan's five ships in his voyage to South America, **2**, 282

Concepcion is the capital of a province of the same name in the South American republic of Chile. It stands 6 miles up the Bio-Bio River and is the most important city in southern Chile. It suffered considerable damage in the earthquake of 1939, **2**, 346

Concertina. A portable musical instrument, producing sounds by similar methods to the harmonium. It was invented by Sir Charles Whealstone (*q.v.*) in 1829. Sound is produced by the in-and-out movements of the bellows.
See *Musical Instruments*.

Concord. A town of Massachusetts, U.S.A., with many literary associations.

Photo-tone Supplement: United States of America, **4**, *between* 272 and 273

Concord, well-known for its stone quarries and as an industrial and commercial centre is the capital of the State of New Hampshire, U.S.A.

Concrete is a mixture of water, Portland cement, sand, broken stone, gravel or other material. When the cement sets it binds the sand, etc., together into a solid mass which hardens very quickly and becomes harder with age.

By using moulds, concrete can be made to take any shape desired, **7**, 329 *et seq.*

Picture: Pillars of Concrete, **7**, 329

Concussion of the brain is often present in head injuries. Quiet, rest and sleep are necessary and the doctor should be summoned urgently, **8**, 242

Condiments are forms of seasoning and spices for food as used at table.

Condor. A bird of the vulture family found in America, **2**, 345

Conduit is the name given to a pipe, tube or small channel carrying water or other fluid. Conduit Street, in London, is named after an old water channel.

Cone Flower. Name sometimes given to the perennial plant *Rudbeckia* (*q.v.*).

Coney. Name sometimes given to a rabbit.

Coney Island is a world-famous pleasure resort on Long Island, New York in the U.S.A., **3**, 192

Confirmation is the ceremony by which a person of "mature" age takes the responsibility of the vows made by godparents at baptism

"Mature" means seven years in the Church of Rome, thirteen or fourteen in the Anglican and Lutheran Churches.

Confiscate means to seize as being forfeited. If a person is found trying to smuggle goods into a country, the goods are confiscated by the State for its own use or to be destroyed.

Conflagration means an extensive and destructive fire. Historic conflagrations are: the Great Fire of London, 1666; the burning of Moscow, 1812; of Chicago, 1871; of San Francisco, 1906 and of Tokyo, 1923.

Confucius (550–478 B.C.). The greatest of Chinese philosophers, his teachings create the standard of right living in China, **2**, 402; **4**, 223

Conger Eel. A snake-like fish found only in salt water. It may reach a length of 6 ft.

Colour Plate: **1**, *facing* 204

Special Colour Supplement: British Salt Water Fishes, **8**, *facing* 257

Congleton is a quaint old town in Cheshire and not far from here is Little Moreton Hall which was built about the year 1540, **3**, 411

Picture: **3**, 406

Congo is the name of the largest river of Africa. It is about 3,000 miles in length and flows into the South Atlantic at Banana. The river mouth was discovered in 1484 by Diego Cam, **2**, 286

Congo, Belgian. This rich colony covers nearly a million square miles and stretches from the mouth of the Congo on the west African coast to Lake Tanganyika in the east. Leopoldville is the capital. The colony yields agricultural products such as palm oil, cotton, and timber, but of much greater importance is its mineral wealth which is immense. Copper, diamonds, tin, gold, silver, uranium, radium, and iron are all mined. Belgium first explored the territory thoroughly and took it over in 1908, **3**, 300; **4**, 384

Congo Caves are near Oudtshoorn in the Cape Province of the Union of South Africa. Rider Haggard is said to have been inspired by these caves to write *King Solomon's Mines.*

Picture: **3**, 291

Congregation means an assembly of persons, especially in a place of worship. St. Paul's Cathedral, London, holds a large congregation. On winter afternoons we can watch the congregation of vast numbers of starlings before roosting-time.

Congress. Name given to the Parliament of the United States of America. It consists of the Senate and House of Representatives. The word Congress first arose when English settlers banded themselves together to protest against what they considered unjust taxes, **2**, 194

The word congress is also used for other meetings of representatives such as Church Congress and Trades Union Congress.

Congreve, William (1670–1729). A famous English dramatist, born at Leeds, who specialised in comedies of manners. *Love for Love* is one of his best plays, **2**, 179

Conical means something having the shape of a cone. A cone is a solid figure rising from a round base or bottom and tapering to a point.

Conifers. Name given to cone-bearing trees, such as cedars, firs, larches, cypresses, pines and junipers, **1**, 414

Pictures: **1**, 315, 413

Conifer Belt is the name given to districts of Canada where the climate is specially suited to the growing of conifer trees, **3**, 168

Conine is a poison contained in the plant hemlock, **1**, 348

Coniston. A small town of the English Lake District, in Lancashire. It is near the lake known as Coniston Water, **3**, 88

Coniston is a town of Ontario, Canada, famous for its copper-nickel mines.

Connaught, Duke of (1850–1942). Third son of Queen Victoria. He served with distinction in the British Army and was Governor-General of Canada.

Connaught is one of the four provinces of Ireland. Its counties are Galway, Mayo, Leitrim, Roscommon and Sligo. Its chief river is the Shannon. The province is wholly in Eire.

Connecticut is one of the New England States of the U.S.A. It has many industries as well as agricultural interests. Hartford is the capital, **2**, 158. (*Pron.* Konet'-ikut.)

Pictorial Map: **4**, 291

Connemara is the name given to the western part of County Galway, Eire. It has peat bogs and is famous for its scenery and marble mountains, **3**, 142, 144, 149

Conon. A river of Ross and Cromarty, in Scotland. It flows to the Cromarty Firth.

Picture: **3**, 134

Conquistador is the term used to describe one of the Spanish conquerors of the New World, **4**, 330

Conrad, Joseph (1856–1924). Widely read writer, he began life as a sailor. A Pole by birth, he settled in England. *Almayer's Folly* and *An Outcast of the Islands* were two of his novels, **7**, 242

Picture: **7**, 241

Conscience Money is the name given to moneys received by the Chancellor of the Exchequer from people who have defrauded the revenue at some time but later make payment to ease their conscience, **9**, 358

Conscription means compelling people to serve in the fighting forces. In continental countries, conscription has long been a custom, the menfolk serving a period of years in army, navy, or air force. In Britain, conscription has only recently been introduced and then in times of grave national emergency, *e.g.*, during the First and Second World Wars. Persons so serving are known as conscripts, **2**, 238, 246

Consecrate means to make sacred or holy, to devote to the service of God When a new church has been completed, it is consecrated by a bishop

Conservatoire is the continental term for a school of music, originally of a charitable kind. The French was founded in 1793, the Milan in 1808 and that at Leipzig in 1843 under the control of Mendelssohn

Consignment means all the goods sent together at one time to the same address. A consignment may include hundreds of separate parcels, or many truckloads of material

Consols means the Consolidated Funds, in other words national debts of the country which have been grouped together for convenience, **9**, 354

Consommé is the name given to clear soup.

Consonant is a letter which cannot be pronounced alone at the full pitch of the voice. Consonants are either mute or sibilant (hissing, *e.g.*, *s*, *z*) and the mutes can be classified according to the organ of speech by which they are made—throat, teeth, lips; or, according to the sound—sharp, flat or aspirate.

For instance, *p* is a sharp labial or lip sound and *g* a flat guttural or throat sound.

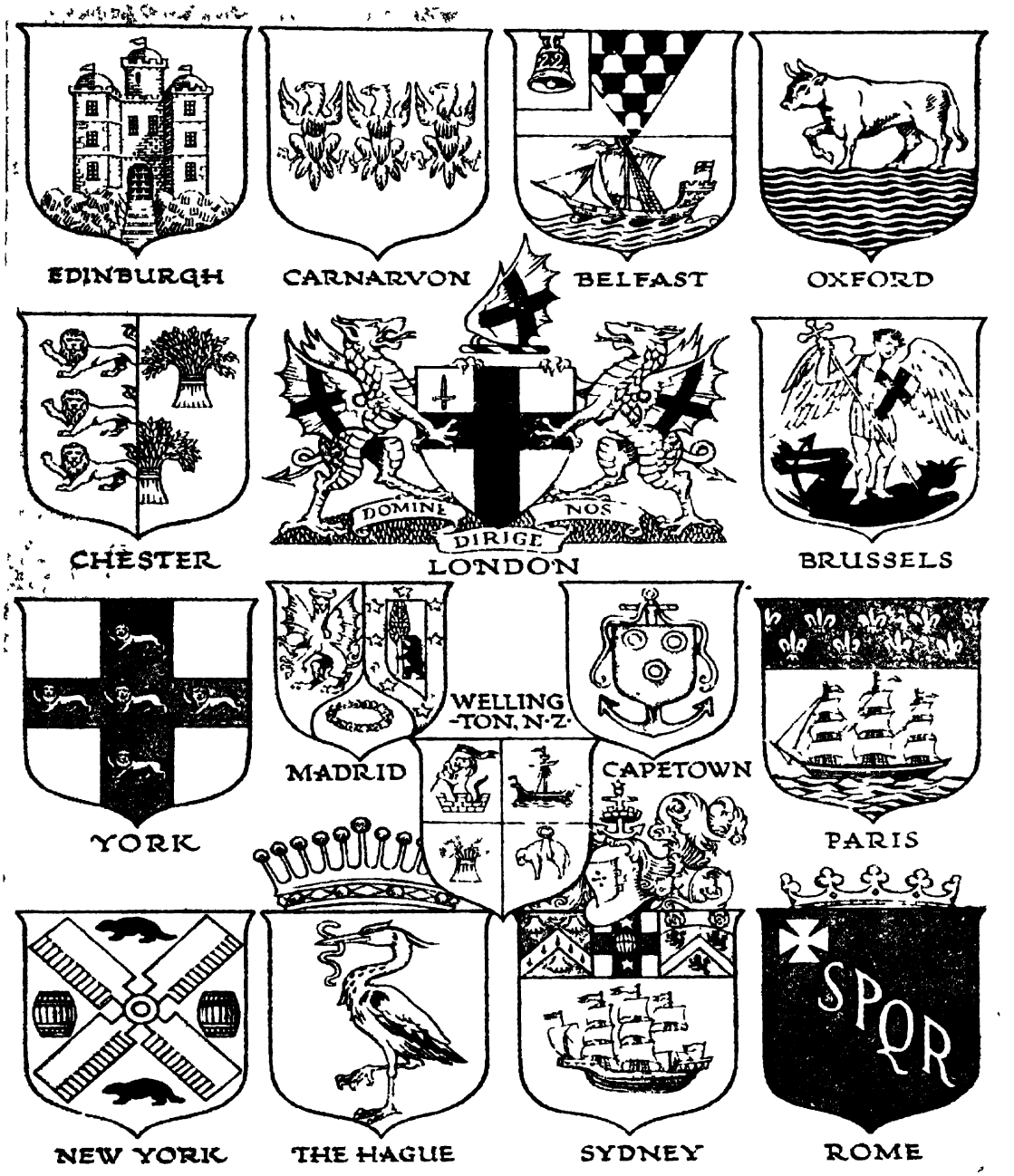
Consort means a husband or wife. If a reigning queen marries, her husband is not called King, but Prince Consort; though, in a reverse case, a woman would be Queen Consort.

Constable, John (1776–1837). Son of a Suffolk mill-owner, he became the greatest painter of landscapes of his time, **7**, 89

Pictures: The Hay Wain, Flatford Mill, **7**, 87

Constance is a lake of Central Europe coming between Switzerland and Germany and having a small portion of Austria on its shores. It is nearly fifty miles in length and the Rhine flows through it.

COATS OF ARMS OF FAMOUS CITIES



Specially drawn for this work.

The *coats of arms* (see p. 83) of most of our ancient cities were taken from those of the early feudal lords; in other cases the arms have been designed to suggest some special feature or even trade of the city. The origin of armorial bearings is lost in history, but in early times they were used to distinguish combatants in the field or in the lists, and in England came into general use about the period of the Second Crusade (A.D. 1147). Above are seen the coats of arms of well-known British cities as well as those of the capitals of other countries.

Here Count Zeppelin conducted his experiments with airships, **4**, 70

Constanta is the great port of Rumania on the Black Sea. It is used for the export of oil, **4**, 96

Constantia. A famous wine district of the Cape Province of South Africa. The Groot Constantia farm there has some 140,000 vines.
Picture: **3**, 281

Constantine, father of the Roman Emperor Constantine the Great, was a distinguished soldier and one of the two Cæsars who succeeded Diocletian and Maximian. He died at York, A.D. 306, **2**, 403

Constantine, Arch of. See *Arch of Constantine.*

Constantine the Great (288–337). He was the founder of Constantinople and the first Roman Emperor to show tolerance for the Christians. His memorial, the Arch of Constantine, still stands at Rome, **2**, 403
Picture: **1**, 139; **4**, 144

Constantinople. See *Istanbul*, which is the modern Turkish name for this ancient city.
—visited by the fourteenth century traveller, Ibn Batuta, **2**, 271

Constellation is the name given to a group of stars in the skies. This grouping is believed to have been carried out by Chaldean shepherds, **8**, 171

Constitution is the system of laws by means of which a State is governed. The Constitution of Britain is largely unwritten but consists of an accumulation of customs and precedents, with certain laws dealing with particular aspects. The oldest written Constitution is that of the U.S.A. See *Our Parliament—and Others*, **9**, 40 *et seq.*

Consul. An official of the republic of Ancient Rome. Two consuls were appointed to direct the affairs of state in peace and to lead its armies in war, **2**, 66
—In modern usage, consul is the title of an officer appointed to represent his country at some place abroad.

Continent is the name given to the large divisions of land on the earth's surface. The continents are: Europe, Asia, Africa, America, Antarctica and Australia.
See also *Atlas Supplement*, end of this volume.

Continental means belonging to or having the nature of a continent. Australia is an island, in so far as it is entirely surrounded by water; yet its enormous size makes it continental rather than insular.
When we speak of Continental cities or countries we generally mean those on the Continent of Europe.

Continental System. This was established by Napoleon through the Berlin Decrees (1806) which declared Britain to be blockaded and forbade trade with her. Britain retaliated with similar decrees (Orders in Council) aimed at France. Since Britain had command of the sea, her Orders in Council were the more effective, **2**, 201

Continuity Girl. An important person amongst the workers in the production of a film. She watches the actors to see that they do not by accident appear in the wrong costume, or do something which is not in line with the script, **9**, 256

Contour is the outline or shape of anything; the line that marks the boundary of a figure or solid body.
The contour of a mountain is plainly seen against the sky beyond it.

Convalescent means recovering from an illness. The word is also used as a noun, of a person in this state.
A convalescent home is a building to which convalescents are sent to regain their strength after leaving hospital.

Conveyance. The means by which anything is conveyed, or carried from one place to another especially a vehicle or carriage of some kind. See *Vehicles.*
Lawyers mean by a conveyance a document or agreement by which property is transferred from one owner to another.

Conveyor. A device for moving foods or materials from one place to another. The most widely used form is the belt conveyor, an endless band running over rollers in a fixed frame.

Convocation is the assembly of the clergy of the English Church. The Archbishops of Canterbury and York each summon one of these assemblies when Parliament is about to sit.
The convocations sit whilst Parliament is in session.

Convolvulus. A wild plant of the countryside, characterised by its twining stems. Its petals are united in a tube. The common variety, often known as bindweed, is a trailing plant with white, or pink and white, flowers, **1**, 302
Picture : **1**, 302

Convoy means a number of soldiers, or ships, accompanying others in order to protect them on their way from place to place, by land or sea. Sometimes the goods or men protected are called the convoy. In the two World Wars the word was particularly applied to the system of merchant ships sailing as a large fleet, protected by the Navy and aeroplane patrols, **8**, 12, 38
Picture: A Mighty Convoy, **8**, 43

Conway. A river of North Wales. Its waters are being used to provide hydro-electric power, **3**, 106 *et seq.*

Conway. A town and port of Carnarvonshire. Conway Castle was begun in 1284 and Edward I was beseiged there, **3**, 102
Pictures: Conway Castle, **3**, 93
After Five Hundred Years, **3**, 97

Cooch Behar is the name of an Indian State in Bengal where rice is the principal crop.

Cook Islands form a group in the Pacific; there are six large islands and a number of smaller ones, Raroto ga being the chief. They belong to New Zealand, **3**, 274

Cook, Captain James (1728–79). He joined the Royal Navy in 1755 and rose rapidly. Famous for his voyages of exploration to Australia, New Zealand and the Antarctic. Murdered by natives of the Hawaiian Islands, **2**, 309 *et seq*, 366, 409 *et seq*; **4**, 296
—he discovered, explored, and charted the East Coast of Australia, **3**, 202
—he visited New Zealand, **3**, 249 *et seq.*
Pictures: An Incident in Captain Cook's Voyages, **2**, 309
Captain Cook's Ship, *Resolution*, **2**, 310
Mapping New Zealand's Seaboard, **2**, 311
Winning favour with the Natives, **2**, 313
In the Bay of Adventure, **2**, 315
The Death of Captain Cook, **2**, 316

Cook, Mount. See *Mount Cook.*

Cook Strait, named after Captain James Cook, divides the North and South Islands of New Zealand, **3**, 250
Picture: **3**, 259
Photo-tone Supplement: Capital of a Dominion, **3**, *between* 256 and 257

Cook, Thomas (1808–92). The first man to organise railway excursions. He ran his initial trip from Leicester to Loughborough in 1841.

Coolgardie is an old goldmining centre of Western Australia which sprang to fame in 1892 after the discovery of gold there by Bayley and Ford, **3**, 205; **6**, 92
Pictorial Map: **3**, 242

Cooper, James Fenimore (1789–1851). Well-known American author. He is best remembered for *The Last of the Mohicans*, *The Pathfinder* and *The Deerslayer*, **7**, 210

Coot. A water-loving bird. It does not have webbed feet, but there are flattish growths on the toes. The bird swims, dives and flies strongly.
Colour Plate. **1** *between* 160 and 161 (Plate 3)

Cop is the name given in a cotton mill to a reel of weft thread, **6**, 340

Copaiba. A tree of South America which yields a balsam used in medicine, **2**, 341

Copenhagen, the capital of Denmark, stands on the island of Zealand, with a small part of the city overflowing to the island of Amager. It is a seaport as well as a capital, and a commercial and industrial centre. It has many fine buildings, **4**, 47
—bombarded by a British fleet (1807), **2**, 201
Pictures : Christiansborg Palace, **4**, 42
A Tower of Dragons' Tails, **4**, 46
Houses of Parliament, **9**, 42

Copenhagen, Battle of. Fought in 1801, it was a brilliant victory for Nelson and helped to destroy Napoleon's plans, **2**, 198, 301, 410

Copepods, sometimes called "water fleas," are found drifting in the seas, **8**, 72

Copernican System. See *Copernicus, Nicolas.*

Copernicus. One of the largest of the craters on the moon was named after the great astronomer.
Picture: **8**, 134

Copernicus, Nicolas (1473–1543). A famous astronomer, he was the son of a merchant and was born at Torun (Thorn), a Polish town on the river Vistula.
Picture: **4**, 123; **7**, 349; **8**, 107

Cophetua was a mysterious king of some part of Africa who married a beggar-maid, 7, 96
Picture: 7, 92
Copiapo is a town of Chili and a centre of metal industries.
Copper is a metal and one of the elements (symbol Cu). It was one of the earliest metals used by man. When alloyed with tin it forms bronze and with zinc it forms brass. The story of Copper, where it is found and how it is mined, is told in *Copper—The Red Metal*, 6, 112 *et seq.*
Pictures: Blasting Copper Ore, 6, 112
Underground Haulage in a Copper Mine, 6, 113
Grinding Copper Ore, 6, 114
How the Ore is Smelted, 6, 115
Pouring Molten Copper, 6, 116
In the Electrolytic Tank House, 6, 117
For Power and Protection, 6, 118
A Great Liner's Propeller, 6, 118
Locomotive Fire Box, 6, 120
Copper Beech. A handsome tree bearing dark coppery leaves much planted in parks and large gardens, 1, 400
Coppermine. A trading community at the mouth of the Coppermine river in the Northwest Territories of Canada, 3, 162
Coppermine A river of the Northwest Territories of Canada, flowing into Coronation Gulf. The copper deposits along its banks were discovered by Samuel Hearne who explored the river on behalf of the Hudson's Bay Company, 3, 158
Copper Mountain is an important mining centre of British Columbia, Canada, 3, 196
Copper River is a river in the U.S.A. territory of Alaska.
Picture: 4, 295
Copra is the dried kernels of coconuts, obtained chiefly from the islands of the South Pacific, 9, 412
Pictures: Husking Coconuts in the Solomons, 3, 392
Coconut Palms in Ceylon, 4, 361
In the Seychelles, 4, 370
Copyright means the sole right to make and sell copies of a book, drawing, picture, map, musical composition, song, photograph, film, etc.
The creator of any of these owns the copyright, without registration, and may dispose of his rights to others. Copyright exists during the life of an author and for fifty years after his death. The Copyright Act (1911) is in force throughout the British Commonwealth. International copyright is recognised in most countries, but there are certain slight differences in the U.S.A.
Coquilhatville is a town of the Belgian Congo, on the River Congo.
Coral. Though it cannot move, coral is an animal and not a plant. It may best be likened to a sea anemone and it works to form immense coral reefs.
Picture: 1, 231
Coral Fish—See *Fish, Coral.*
Cor Anglais—See *Oboe.*
Corby is an important iron-smelting town in Northamptonshire, 3, 69
Corbeil is a manufacturing town of France, standing on the River Seine to the south of Paris.
Corbridge is a town of Northumberland. It stands on the River Tyne.
Corcovado is a famous peak near Rio de Janeiro. The name means "Hunchback Mountain," 4, 311
Picture: 4, 312
Cord, which is useful for many purposes, can be made with wool or silk by means of frame knitting, 8, 381
Pictures: A Cord made by One Person, 8, 382
The Strands Ready to be Tied, 8, 382
Cordillera is a word meaning mountain range. It is Spanish in origin.
Cordoba. The name of a province of southern Spain and of the chief town of that province. This town stands in the valley of the River Guadalquivir. It was one of the centres of the old Moorish empire in Spain and is noted for its tanneries, 2, 349; 4, 136
Cordova. See *Cordoba.*
Cordyceps. Name given to vegetable parasites which actually grow on the bodies of living insects, 1, 342
Corelli, Marie (1864–1924). Well-known English novelist, she produced a large number of books such as *The Mighty Atom* and *Holy Orders*
Coreopsis. Hardy annual plant bearing bright yellow flowers, 8, 278
Corfe Castle is a touring centre of Dorset famous for its ruined castle.
Corfu is an island of Greece, in the Ionian Sea, 4, 156
Corfu Incident is the name given to the bombardment of this island carried out by warships of the Italian dictator, Mussolini, in 1925, 4, 157
Corinth is an ancient city of Greece on the isthmus which connects the Peloponnesus with the mainland, now cut by the Corinth Canal (*q.v.*). St. Paul visited it and two of his Epistles are to the Corinthians. It was noted for its painting and work in clay and bronze. The third order of Greek architecture was named Corinthian. The new town, known as New Corinth, is two or three miles from the old city.
Picture: When Rome defeated the Greeks at Corinth, 9, 18
Corinth Canal is one of the great engineering feats of Greece. It severs the Morea from the Greek mainland. The Emperor Nero first planned it, but it was not completed until recent times, 4, 158; 5, 53
Picture: 5, 55
Corinthian is one of the Orders of Architecture.
Pictures: 7, 291, 293
Corinthus Bay is on Heard Island in the Antarctic.
Photo-tone Supplement: Among the seals and penguins, 2, *between* 368 and 369
Corinto is the chief Pacific port and Pacific railway terminus of Nicaragua.
Picture: 4, 304
Coriolanus, a rich nobleman and patrician of ancient Rome. His original name was Caius Marcius.
—Coriolanus, the Roman exile, 2, 55
Pictures: At the Capture of Corioli, 2, 55
Out of the Gates of Rome, 2, 56
He Kisses his Mother, 2, 57
Corioli. Name of a Volscian town captured by Caius Marcius, who afterwards became Coriolanus, 2, 55
Cork is the largest county in Eire, situated at the south of the country and in the Province of Munster. The area is hilly, the interests being mainly those of farmlands, though there are some industries.
Cork is the county town, standing on the River Lee. It has many industries and exports farm produce. It is Eire's second port, 3, 149, 150
Cork is obtained from the light outer layer of the cork tree a species of oak that grows in Southern Europe and North Africa. It is cultivated in Portugal and Spain and provides the cork used for bottles and other commercial purposes, 9, 374
—cork trees in France, 1, 314
—cork oak from Portugal, 4, 137 *et seq.*
Cormac's Chapel, on the Rock of Cashel in Tipperary, is named after Cormac McCarthy, an ancient King of Munster. The Chapel was built during the twelfth century.
Picture: 3, 151
Cormorant. A bird often found on rocky coasts; it has a long neck and its chief food is fish, 1, 171, 201, 202
Pictures: Cormorant under Water, 1, 197
Swallowing a Fish, 1, 197
Cormorant, Green. See *Shag.*
Corms are underground buds, but they differ from bulbs in having no scales. Crocuses and gladioli grow from corms, as does the cyclamen.
Corn Cob Pipes. Much used in America, these tobacco pipes are made from the cobs of maize or Indian corn, 1, 308
Corn Cockle. A weed of the cornfields. It bears a purple flower and has long slender leaves covered with hair. The whole plant is poisonous, 1, 350
Special Colour Supplement: British Wild Flowers, 1, *between* 304 and 305 (Plate 3)
Corncrake. See *Landrail.*
Corneille, Pierre (1606 84). A famous French dramatist and poet, 4, 8
Corner Brook. An important wood pulp and paper centre on the Humber River in West Newfoundland, 3, 161
Cornet. This is a brass wind instrument of the bugle or trumpet family, fitted with valves which enable it to produce the chromatic scale. It was at one time very popular as a solo instrument. In the reign of Queen Elizabeth, a group of "Royal Cornettors" was part of the Royal musical *ensemble*, but the *cornetts* they played were entirely different from the modern cornet. They were wood-wind instruments and were used up to the seventeenth and eighteenth centuries.
Cornflower. One of the most popular of the hardy annual plants. Family name Centaurea, 1, 392; 8, 278
Pictures; 1, 389; 8, 273
Special Colour Supplement. British Wild Flowers, 1, *between* 304 and 305 (Plate 4)

Cornice. A horizontal projection at the top of a piece of moulding. Many house walls have cornices along the top on the outside, both as decorations and to throw rain clear of the walls

Cornish Chough. See *Chough*.

Cornish Salmon. Name given to the fish pollack.

Cornish Tin Mines have been worked for thousands of years and were known to the Phœnicians, **6**, 129
Pictures: Off to the Crushers, **6**, 129
Tin Miners and Their Work, **6**, 126
Better than Climbing, **6**, 128

Corn Laws. The early corn laws were mainly concerned with regulating the export of corn. But later laws checked its import, the purpose being to prevent too low a price. There were Corn Laws passed in 1360, 1436, 1773, 1791, and 1804. The Corn Law of 1815 forbade the importation of corn until the price was £4 a quarter; it produced great distress. In 1846, the Second Ministry of Peel brought about the repeal of the Corn Laws, so recognising the need for cheap bread for the swelling industrial population, **2**, 411

Corn Marigold. A wild plant blooming in late summer and producing bright yellow daisy-like flowers.

Cornwall is our most westerly county, forming a long peninsula and having a rocky coast. It includes the Scilly Islands. The county town is Bodmin and there is a cathedral at Truro. Falmouth is the chief port, **3**, 42 *et seq.*
Pictures: Cornwall's Curious Cheese-wring, **3**, 45
Tintagel Castle and Steeple Rock, **3**, 46
Truro Cathedral, **3**, 49
The Harbour of Mevagissey, **3**, 50
The Cave at Mullion Cove, **3**, 51

Cornwall, Duke of. Title held by the eldest son of the British Sovereign. The Duchy includes property in Cornwall, Devon and elsewhere.

Cornwallis district of Nova Scotia is noted for its apple orchards.
Picture: **3**, 181

Cornwallis, Charles, Lord (1738–1805). In the American War of Independence he surrendered to George Washington at Yorktown, Virginia (1781), **2**, 195, 410
Picture: **2**, 195

Cornwell, John Travers, V.C. (1899–1916). Born at East Ham, London, he was one of the outstanding heroes of the war of 1914–18. He served on H.M.S. *Chester* at the Battle of Jutland and died of wounds later.

Cornwell Badge is the highest of all honours a Boy Scout or Wolf Cub can win. A lower award, the Cornwell Certificate, is also made for meritorious bravery.

Corolla. The part of a flower formed by the petals, **1**, 292

Coromandel Coast is the seaboard of India immediately to the north of Ceylon. The shore district was once known as the Carnatic and was the scene of some of Clive's exploits, **3**, 320

Corona is the name given by astronomers to the halo of pearly light surrounding the disc of the moon during a solar eclipse, **8**, 125
Picture: **8**, 127

Corona Borealis is the name of a constellation or group of stars.

Coronation is the term used to describe the crowning of a king or queen as part of a religious ceremony. Since William the Conqueror the Sovereigns of England and, later, of the United Kingdom have been crowned in Westminster Abbey.
Pictures: **2**, 107, 133
Colour Plates: When William the Conqueror was Crowned, **2**, *facing* 100
The Challenge of the King's Champion, **2**, *facing* 108
At the Court of Claims, **2**, *facing* 109

Coronation Chair, with the Coronation Stone beneath the seat, is to be seen at Westminster Abbey. The Stone was used at the coronation of many Scottish kings, and was brought to Westminster in 1296 by Edward I. See *Scone*.
Picture: **7**, 310

Coronation Class. A type of express streamline locomotives built by the former L.M.S
Picture. **5**, 125

Corot, Jean Baptiste (1796–1875). Celebrated French landscape painter noted for the delicacy of his work, **7**, 72
Picture. **7**, 72

Corporation means a body of people acting together. The corporation of a town is formed by the persons elected to manage its affairs under the chairmanship of the mayor. See also *Borough Council*.
The word also applies to a number of people authorised by law to act as a single person, and in this sense has much the same meaning as a commercial company

Corpuscle is the name given to a tiny atom of matter. The colour of the blood is due to red corpuscles floating in it. They are so small that 10 million of them would be needed to cover a penny. The blood also contains a much smaller number of white corpuscles.

Corral. A large pen for horses or cattle; an enclosure into which wild animals are driven. The word is also applied to a ring of waggons formed as a protection against attack.

Corregio, Antonio Allegri da (1494–1534). One of the world's greatest painters of classical and sacred subjects, **7**, 22
Picture: **7**, 25

Correspondent. One who sends news to a person or newspaper by letter or telegram. Newspapers appoint special correspondents in the capitals of most countries to keep them informed of what happens there.

Corrib is the name of a large lake or lough in Connemara, County Galway, Fire, **3**, 144

Corridor Trains were first used on British railways about 1890. They brought with them the dining-car and sleeping-car, **5**, 125

Corriedale is a breed of sheep first produced in New Zealand by crossing British breeds with merino sheep. It is a dual purpose breed, yielding both high quality wool and excellent mutton.
Picture: **3**, 215

Corrosion means the perishing of metal, due to the action of air or chemicals. We are most familiar with the corrosion of iron and steel, which produces rust.

Corrugated refers to something bent into regular grooves or ridges. Corrugated iron is shaped by being passed between powerful fluted rollers. Thus treated, it will resist a much greater bending strain than would flat iron.

Corsair is another word meaning "pirate." It is usually applied to the pirates of the north African shore who were known as the Barbary corsairs. Tarik, who built a fortress long ago on Gibraltar, was a corsair. The corsairs were suppressed in 1830, **4**, 131; **8**, 53

Corsham is a small town of Wiltshire noted for its bath-stone quarries.

Corslet is the piece of plate covering a soldier's body in the days when armour was worn. It applies, strictly speaking, to the breastplate only.

Corsica is an island of the Mediterranean belonging to the French. It is more than 100 miles in length and about 52 miles wide. It produces olives and many other fruits besides agricultural crops. Famous as the birthplace of Napoleon. The capital is Ajaccio, **2**, 197, **4**, 148
Picture. **4**, 138

Cort, Henry. In 1784 he invented the "puddling" process for purifying iron, **6**, 53

Cortes, Hernando (1485–1547). The Spanish soldier who, in 1518, conquered Mexico and broke the power of the Aztecs, **2**, 406, **6**, 101; **9**, 30

Cortex is the name given to the grey matter, or nerve cells, which cover that part of the brain called the *cerebellum*. The cerebral cortex is the organ of will, and the centre of reasoning, memory and speech, **6**, 407

Cortina. A town of north-eastern Italy and a noted climbing and winter sports centre. It is in the Dolomites
Picture: **4**, 152

Corunna is a seaport and the largest town in the Spanish province of Galicia, famous in history for its association with Sir John Moore (*q.v.*), **2**, 202, 350

Corwen. A town of Merionethshire, Wales. It is a centre of slate quarrying and stands on the River Dee.

Cos. An island in the Ægean Sea

Cos Lettuce is the tall form of this useful vegetable. See *Lettuce*.

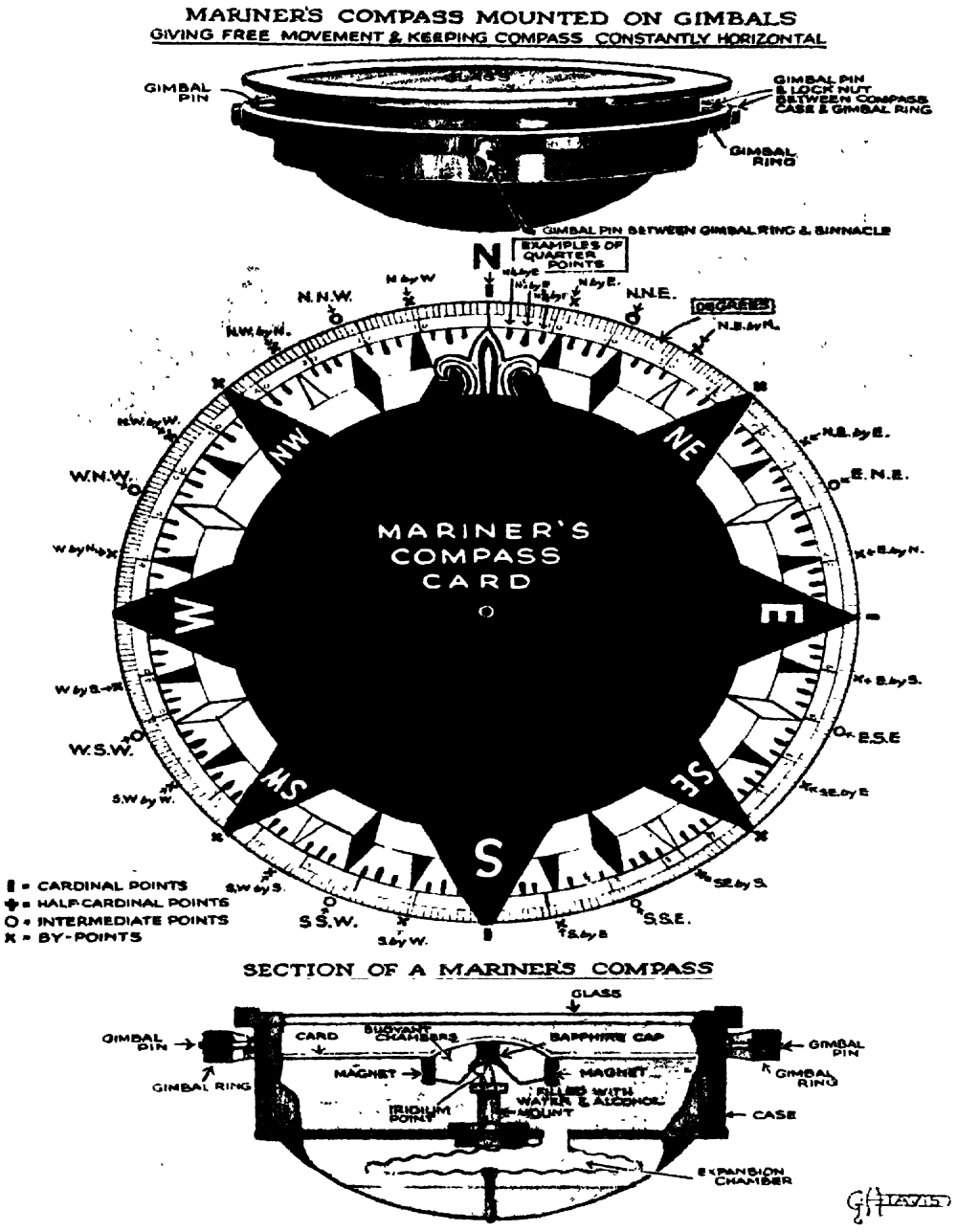
Cosmea. Tall-growing half-hardy annual plant. It bears flowers in a wide variety of colours.

Cosmic Rays are one of the mysteries of science. They come from interstellar space and penetrate the earth's surface, **7**, 414

Cosmos. A half-hardy annual plant more often known as *Cosmea* (*q.v.*).

Cossack, H.M.S. A British destroyer which rescued nearly 300 British seamen imprisoned on the German ship *Altmark*, **2**, 248

TO GUIDE THE MARINER



Specially drawn for this work.

The Mariner's Magnetic *Compass* (see p 87), which has done splendid service for centuries, has now a formidable rival in the mechanical gyroscopic compass. But the method of suspension (illustrated at the top of this picture) in the binnacle, and the compass card (as seen at the centre), are retained by the newcomer. To "box the compass" one has to name the thirty-two points (cardinal, half-cardinal, intermediate and by) in order, beginning at N. and working round clockwise back to N. At the bottom of the illustration is given a sectional view of a "liquid" compass, which has the card submerged in a liquid that checks sudden tilting and rotation.

Costa Rica is a Central American republic with a population of nearly 1 million. It is largely an agricultural country with coffee, bananas, and cocoa as main crops. There are rich forests. San José is the capital, **4**, 304, 305, 388.
Pictures: The Airport at San José, **4**, 307

Costume. The different garments in which mankind has clothed himself have undergone many changes of a revolutionary character since the days of the ancient Egyptians, but the changes have been slow, particularly in the earlier centuries. Greek dress was extremely simple and for both men and women it consisted of the *chiton*, a large piece of woollen cloth fastened on the shoulder by a pin. Even when changes did come the Greek dress was always simple and depended for effect on the art of draping.
Roman dress was largely a modification of the Greek fashions, and from this gradually evolved the dress of medieval times in Europe. Men's dress was a long full gown with tight sleeves, embroidered or decorated according to the wearer's position. Women's dress fitted more closely at the waist but the skirt was long and full, while the back of the head was covered with a veil. Men's costume slowly changed and the tight-fitting jacket and cloth or woollen hose covered the leg from hip to toes. The Elizabethan period brought more changes and the reign of Charles I costumes became generally more elegant. Towards the end of the seventeenth century the brightness began to die away in men's attire and the three garments which still remain the typical attire for men came into fashion. By the beginning of the nineteenth century trousers were being worn by all men and they had become generally more sombre while women began to experiment still more and their fashions became much more varied.
Colour Plate: Costumes through the Centuries, **6**, *facing* 332

Côte D'Azur is the name given to part of the coast-line of the French Riviera.

Cotentin is the name of a peninsula of Northern France. Its principal town is Cherbourg.

Côtes-du-Nord. This is a department of Northern France noted for its agricultural products. St. Brieuc is the principal town.

Cotman, John (1782–1842). Son of a Norwich draper, he was a leader in the so-called Norwich School of British artists, **7**, 92
Picture: **7**, 89

Cotopaxi is a volcano of the Andes Mountains in Ecuador, nearly 20,000 ft. in height, **4**, 330

Cotswold Hills. Range of limestone hills stretching from the valley of the Bristol Avon into Gloucestershire and beyond. From these hills flow the seven springs that unite to form the young Thames, **3**, 22

Cotton, Charles (1630–87). An English writer and poet, he is best known as the friend of Izaak Walton. He wrote part of *The Compleat Angler*, **7**, 230

Cotton. Cotton is raised from a shrubby plant of the same order as hollyhocks and mallows. It is the wool which surrounds the seeds in the pods. In the section *Cotton Growing and Spinning* will be found the story of how it is grown, harvested, packed, transported, spun and woven, **6**, 335 *et seq.*
—how cotton is grown in India, **3**, 326
—cotton in the U.S.A., **4**, 292, 387
—Egyptian cotton, **4**, 378
Pictures: In a Bombay Cotton Mill, **3**, 314
A Cotton-spinner at Work, **3**, 325
Loading Cotton in Uganda, **3**, 378
Cotton "Down South," **4**, 287
Down in the Cotton Fields, **4**, 342
A Turkish Cotton Factory, **4**, 355
Egypt's Cotton Industry, **4**, 366
Nigerian Cotton Sellers, **4**, 379
Cotton-picking in California, **6**, 335
The most Useful of Flowers, **6**, 336
What Comes from the Flower, **6**, 337
Cotton ginning, **6**, 339
In the Drawing Shed, **6**, 340
Modern Machinery in Lancashire's Mills, **6**, 341
Wasp Drawing in a Cotton Mill, **6**, 341
Winding from Ring Tube to Bobbin, **6**, 343
Finishing Touches, **6**, 344
Colour Plate: Cotton Gathering in Egypt, **6**, 325

Cotton Tree. A giant of this species is to be found at New Spanish Town, Jamaica. There is room for a thousand people beneath its shade.
Picture: **1**, 330

Couch Grass. Name of a coarse, rampant weed which produces strong trailing roots. Also known as Twitch, **1**, 337

Couching is a feature of embroidery, one or more thick threads being sewn down with thinner thread, **8**, 413
Picture: **8**, 414

Coué, Emile (1857–1926). A French druggist, he became the great advocate of auto-suggestion as a cure for disease. There is a Coué Institute in Paris.

Council of Europe. This important body met for the first time in August 1949. It has been set up by the nations of Western Europe, who believe that there is need "of a closer unity between all like-minded countries of Europe," and affirm their devotion to the spiritual "and moral values which are the common heritage of their peoples and the true source of individual freedom, political liberty and the rule of law." The aim of the Council is to achieve a greater unity between its member nations and to facilitate their economic and social progress.
The Council of Europe consists of (*a*) a Committee formed by the Foreign Ministers of the countries concerned and (*b*) a Consultative Assembly formed by an agreed number of representatives from each State appointed as each Government shall decide. Questions of defence are ruled out from discussion. Other subjects for discussion by the Assembly must be approved by the Committee of Ministers.
The nations who are members of the Council and the number of their representatives on the Assembly are: Belgium 6, Denmark 4, France 18, Greece 6, Iceland 3, Irish Republic 4, Italy 18, Luxembourg 3, Netherlands 6, Norway 4, Sweden 6, Turkey 8, United Kingdom 18; total 104.

Council of People's Commissars. This is the supreme governing body in the Soviet Union. It is now known as the Council of Ministers, **4**, 122

Count is the word used to describe the number of fibres in sheep's wool. Australian Merino wool has the highest count.

Counterbalance means to serve as a balance to; to weigh against with equal weight; to act against something with equal power and weight.

Counterpoint was the earliest form of harmony in music. In counterpoint three or four or more voices or instruments sing or play together, but each "part" is an independent melody, which fits in with the other parts. In later forms of harmony the main interest (the tune) centres in one part, but counterpoint is still in use.

Counting. First lessons in the multiplication tables for tiny tots, with stories and pictures, **9**, 140 *et seq.*

Count of Monte-Cristo. Title of a famous story by Alexandre Dumas. In it there figures the Château d'If, at Marseilles, **7**, 274
Pictures: **4**, 17; **7**, 275

Country Cottages, in their many styles, are a great feature of English scenery.
Pictures: Welford-on-Avon, **3**, 1
The Charm of an English Village, **3**, 77
Roofs of Thatch and Stone, **3**, 78
Unchanged by Time, **3**, 79

Countryside Friends, Our. About the badger, otter, stoat, weasel, mole, hedgehog, rabbit, squirrel, etc., **1**, 122

County Council. A body of men and women elected by the voters in each county, to carry out certain duties of local government laid on the council by Parliament, relating to public health, housing, education, roads, and other matters, **9**, 66

County Courts are presided over by a judge for the trial of civil cases, and perform much judicial work, **9**, 71

County Hall, London, is the seat of government for the County of London. It was begun in 1912 and opened in 1922.
Pictures: **3**, 23; **9**, 60

Coupar-Angus is a town of Perthshire, Scotland.

Courbet, Gustave (1819–77). Son of a wealthy farmer, he became a famous French artist. He painted the picture "After Dinner at Ornans," **7**, 74

Courcelles is a mining town of Belgium.

Courtauld, Augustine. A member of the British Arctic Air Route Expedition, he spent five months alone on the ice cap of Greenland, being buried under the snow for six weeks, **2**, 364
Picture: **2**, 365

Court of Tynwald. This is the governing council of the Isle of Man. It administers the island in conjunction with the House of Keys (*q.v.*), **3**, 92

Courtrai is a town of Belgium in the

flax country of the River Lys. It has a linen industry, 4, 24

Courts of Justice is a general term applied to both the hall or room in which the trial of an accused person is held as well as to the judge and other officials who constitute the Court. See *In the Courts of Justice*, 9, 68
Pictures: The Majesty of the Law, 9, 68
The Royal Courts of Justice, 9, 73
The Long Arm of the Law, 9, 336

Cove is a small port on the Aberdeenshire coast a few miles south of Aberdeen.
Picture: 3, 136

Covenanters. A Scottish religious body of the Stuart times who were persecuted for maintaining the covenants of their religion, Presbyterianism, 2, 171
Picture: Into the Homes of the Covenanters, 2, 169

Covent Garden. Name given to the London market for fruit, flowers and vegetables. It stands on the site of what was once the garden of the Convent of Westminster, 3, 62

Coventry is an industrial city of Warwickshire. It is a great centre for the manufacture of motor cars, bicycles, watches and clocks, ribbons, etc. The city suffered heavily in an enemy air attack in November 1940 when the Cathedral was burnt out and the centre of the city gutted, 2, 251, 398
—an important manufacturing centre, 3, 71 and 74
Picture: 3, 75

Coverdale, Miles (1488–1568). The famous translator of the Holy Bible. He became Bishop of Exeter in 1551.

Cow. A word meaning usually a female animal of the ox tribe. The females of the elephant, rhinoceros and some other creatures are also known as cows.

Cowal is a district of Argyllshire, Scotland. It is found between Loch Fyne and the Firth of Clyde. Dunoon is one of its towns.

Cowbane. Another name for the familiar wild plant Water Hemlock (*q.v.*).

Cowbridge, in the centre of a farming district, is a town of Glamorganshire.

Cowdenbeath is a mining town of Fifeshire, Scotland.

Cowes. The chief port of the Isle of Wight, it stands on the Medina Estuary. Famous for its regatta, 3, 37

Cowley is the name of a village near Oxford which is now virtually a suburb of that city. It has an important car manufacturing plant, 3, 24

Cow Parsley is another name for the common wayside plant *Wild Parsley* (*q.v.*).

Cow Parsnip. Familiar tall wild plant with flattened flower heads, 1, 306

Cowper, William (1731–1800). A shy, nervous boy, he became subject to fits of depression. His most famous ballad is *John Gilpin's Ride*, 7, 140
Picture: 7, 140

Cowries are members of the mollusc family found in the warmer parts of the world. Among some races the shells are used as ornaments or as a form of money.

Cowslip. Member of the Primula family of plants. A wilding, often cultivated in our gardens. See *Polyanthus*, 1, 301
Colour Plate: 1, *between* 304 and 305 (Plate 2).

Cowthorpe Oak. A famous tree near Wetherby, Yorkshire, about 1,600 years old, 1, 331

Cox, David (1783–1859). Born near Birmingham, the son of a blacksmith, he became a great English painter, 7, 88
Picture: 7, 86

Coxswain means one who steers a rowing boat or the person in charge of a lifeboat. The coxswains of the Oxford and Cambridge boats, who must be lightweights, have a very responsible task.
A lifeboat's coxswain is the most experienced member of the crew and acts as captain.

Coypu Rat. A rodent animal found in many parts of South America. It makes its home in burrows at the waterside.

c.p. means candle power.

C.P.R. means Canadian Pacific Railway.

Cr. means Creditor, *i.e.*, a person or company to whom money is owed.

Crab. One of the crustaceans, a name given to marine creatures which change their shells. More than fifty species are known round our coasts, 9, 236. (*p.h*)
—How does a crab change its shell? 1, 236
Pictures: Crab Babies, 1, 237
Fiddler Crab, 1, 236
Fighting Crabs, 1, 238

Crab, Green. Name sometimes given to the common shore crabs, 1, 238

Crabbe, George (1754–1832). An English poet. He is best remembered for his *Tales in Verse*.

Crab's Eyes. Name given to the seeds of a plant called jequirity. The seeds are used in certain disorders of the eye, 1, 334

Crab Shore. This is the most common of our British crabs, 1, 238

Crab, Stock. Name given to the buds or wood of the crab apple from which fruit-bearing apple trees are produced.

Cracow is the third largest town in Poland, and stands on the River Vistula. It is a centre of the iron and steel industry, 4, 128
Picture: 4, 125

Craigellachie is the point on the Canadian Pacific Railway where Donald Smith, the Earl of Strathcona, drove the last spike into place, thus completing this amazing engineering achievement, 3, 158

Craigie, Mrs. Pearl Mary Theresa (1867–1906) Author and dramatic writer, she used the pen-name "John Oliver Hobbes." Her novels *The School for Saints* and *Robert Orange* are well known.

Craigowl is one of the peaks of the Sidlaw Hills in Scotland. It rises to nearly 1,500 ft.

Craik, George Lillie (1798–1866). Author of *The History of English Literature* and many other works.

Crane. One of the largest of the wading-birds. Found in the marshy districts of many countries, including Great Britain.

Crane is the name of an appliance used at docks and similar places for moving goods, 8, 96
Pictures: To Lift 150 Tons, 8, 91
A Giant Floating Crane, 8, 101

Crane, A Model Travelling. An interesting model you can make yourself, 8, 372
With *Diagrams.*

Crane Fly. Another name for the familiar daddy-long-legs (*q.v.*).

Crane's-Bill, Meadow. See *Meadow Crane's-bill.*

Cranium. The part of the skull that encloses the brain of a man or animal.

Cranmer, Thomas (1489–1556). Archbishop of Canterbury in the reign of Henry VIII, he did much to compile the Prayer Book. He was burned at the stake as a heretic, 2, 142, 406
Picture: 2, 144

Cranwell is a small town of Lincolnshire. Here is situated the Cadet School of the Royal Air Force, which King George VI attended, 2, 243

Crash is the name given to a coarse form of linen material, 8, 380

Crassus. One of the rulers of Rome in the time of Julius Cæsar, 2, 75

Crater. A great cup-like hollow, more or less circular in shape, at the top of a volcanic cone. When a volcanic eruption takes place, molten ashes and lava are hurled out from the crater, and some of them help to increase the height of the crater's walls.

Crater Rings is the term applied to craters on the surface of the moon, of which there are estimated to be about 200,000. Of this number no less than 30,000 have been mapped, 8, 136

Crawfish are often found on our western coasts. They are a form of rock lobster and have no pincers. See also *Crayfish.*

Crawford, Francis Marion (1854–1909). Widely read novelist and historian. He was author of *A Cigarette-maker's Romance.*

Crawhall, Joseph (1861–1913). A famous artist from Northumberland, he belonged to the Glasgow School, 7, 105
Picture: 7, 107

Crayfish. A fresh-water shellfish of the lobster type. It is common in many of our rivers.
Picture: 1, 234

Crayford. A Kentish village standing on the River Cray.
Picture: Skull of a Cave Lion found here, 1, 33

Crayon. A soft chalk pencil, white or coloured. A picture or drawing done in crayons is called a pastel. See *Special Colour Supplement*, Fun With Colours. 9, *between* 144 and 145

Crèche is a French word meaning cradle; now generally used for a public day nursery.

Crecy, Battle of (1346). Here the army of Edward III routed the much more numerous forces of the French, 2, 125, 404

Crediton is a small market town of Devon, near Exeter. It was the

birthplace of St. Boniface, A.D. 680.

Creeper. Name of a family of climbing birds, its plumage matching the bark of trees. It feeds chiefly on insects and is mostly found in the woods. One of the best-known is the Tree Creeper (*q.v.*).

Creeping Buttercup. A variety of buttercup that increases by means of strong runners, **1**, 301

Crees is the name of a tribe of Red Indians.

Creosote is a dark, strong-smelling liquid obtained by distillation from tar. It is a combination of carbon and hydrogen. Its chief use is to preserve timber exposed to the weather, **6**, 17

Crescent was the name of the cruiser which was the last command of King George V when a young naval officer, **2**, 230

Crescent means shaped like the new moon, increasing. The moon is crescent, literally, between new and full moon, as the size of the visible part of it grows all the time.

By a crescent moon we usually mean one in the first few days of its first quarter; or, because it has then the same shape, in the last days of the fourth quarter.

Crescent Reef is part of the Great Barrier Reef of Australia

Picture. **3**, 227

Cress. A common garden plant, widely cultivated throughout Europe and usually grown with white mustard to be eaten as the well-known "mustard and cress."

Crete is a large island of the eastern Mediterranean belonging to Greece. Canea is the chief town This island is famous as a centre of early Greek civilisation and contains some remarkable relics of those distant times, **2**, 402, **4**, 157, 158

Pictures Destroyed by War, **4**, 160

The Palace of King Minos, **4**, 161

Creusot is an industrial town in France. It is a centre for ironworks, many railway locomotives being built here.

Creux is the small port and landing-place of Sark, one of the Channel Islands.

Picture. **3**, 52

Crevasse is the name given to a deep cleft in a glacier or embankment. People crossing glaciers have to be on the look-out for crevasses hidden by unsafe bridges of snow.

Crevice means a deep crack; a split; a fissure. Before the face of a cliff breaks away, crevices usually form parallel to the face.

Crewe, Cheshire. has vast works connected with the L.M.S. Railway and is one of our greatest railway junctions. It is the hub of our inland postal "wheel," and no fewer than 9 T.P.O.'s (Travelling Post Offices) stop at this great junction between 11 p.m. and 2 a.m., **3**, 72, 109; **6**, 284

Crib Goch is a peak of Snowdonia, 3,023 ft. in height, **3**, 103

Criccieth, on Tremadoc Bay, is a holiday resort of Carnarvonshire, **3**, 108

Crichton (*pron.* kri-ton), **James** (1560–85). A Scotsman, he became famous as "The Admirable Crichton," because of his remarkable gifts as scholar, poet, linguist, athlete and swordsman.

Cricket. An insect allied to the grasshopper. It has very long hind legs, and the males have the power to make chirping noises.

Cricket is England's national summer game. It is possible that the name originated in the fact that the Saxon stool, called a cricket, was first used as the wicket, or that a stick called a cryc was used for the game. Since then the game has had a long history with many changes, but in 1711 it had become a game of some importance and Kent played an All-England team.

The Hambledon Club in Hampshire was the first to be formed, being established about 1750. The Marylebone Cricket Club (M.C.C.) began on Thomas Lord's ground in 1787, and though the rules of the game have been changed from time to time, the main principles are the same. In Australia the game has also become a national game and in other Commonwealth countries it is played extensively, but it has never achieved popularity on the Continent or in any American country. **9**, 401

—foundation of the M.C.C., **2**, 221

Pictures: A County Cricket match in 1849, **2**, 218

Measurements of our Playing Fields, **9**, 405

Making a Cricket Bat and Ball, **9**, 228, 229

Two of Our National Games, **10**, 97

Cricket Bat Willow. A willow known botanically as salix cærules, the wood of which is much used for making bats.

—sent to Australia, **1**, 326

Crieff is a town of Perthshire, popular as a tourist centre and resort.

Crimea. Name of a peninsula of the Soviet Union on the Black Sea. It was the scene of the Crimean War (1854–56). The climate is in parts sub-tropical and the area fruitful. It was added to Russia during the reign of Catherine the Great, **4**, 106.

—overrun by the Germans, **2**, 252

—the Polos in the Crimea, **2**, 268

Picture: **4**, 116

Crimean Iris. A dwarf-growing type of flag iris, suitable for rockeries. Listed as I. pumila.

Crimean War (1854–56) waged by Britain, France and Turkey against Russia, with the object of curbing Russian power and preventing her expansion at the expense of Turkey. These objects were achieved, but at a cost of great suffering to British soldiers, **2**, 217, 412

Pictures: The Scots Guards depart for the Crimean War, **2**, 216

Florence Nightingale visits Woolwich, **2**, 217

Criminal. A person who has committed a crime; one charged with an offence, found guilty and therefore undergoing punishment in a prison.

Crimp is the term used to describe the crispness of the wool of sheep.

Picture: **3**, 215

Crinan is a small town and touring centre of Argyllshire.

Crinan Canal, nine miles in length, is in Argyllshire, Scotland.

Crinoline. Really a kind of fabric, made chiefly of horse-hair. The word became applied later to what were known as hooped skirts or farthingales.

Crisis. A turning-point; a time of danger or suspense. When two nations quarrel, a crisis may arise when very little may turn the scale towards war or peace.

Crisp, Sir Frank. During the last years of his life he made a famous rock garden in the shape of the Matterhorn on his estate at Henley-on-Thames, **1**, 363

Cristobal is a city in the Panama Canal Zone and stands opposite Colon at the Atlantic entrance to the Canal, **4**, 306

Criticism. A careful judgment passed on a matter, a point raised in opposition. Most speeches made in Parliament provoke criticisms from the party opposed to that of the speaker.

When a new play appears on the stage, newspapers print criticisms of it made by experts, called dramatic critics.

Critique. A close or critical review of a subject Kant's *Critique of Pure Reason* is a profound examination of the foundations on which all reasoning is based.

Croatia is one of the federal units of the republic of Yugoslavia It is a mountainous district with timber and agriculture its chief industries Its chief town is Zagreb, **4**, 90, 94

Crochet is an interesting handcraft carried out with cotton or silk and the help of a small hook, **8**, 400

Pictures The Making of Chain, **8**, 400

Single, double, treble and double treble crochet, **8**, 406

Crochet in wool, **8**, 402

Crocodile. Known as a saurian reptile, it is descended from the extinct monsters of the ancient world, **1**, 113

—why water does not enter its nostrils, **1**, 113

Pictures **1**, 9, 115

Crocus. Pretty spring-flowering plant that grows from a corm. There is also an autumn-flowering form, **8**, 280

Croesus (595–546 B.C.). Ruled over Sardis in Lydia and was known as the richest king in the world, **2**, 1; **9**, 1, 362

Pictures: With Solon, **2**, 2

An Answer from the Oracle, **2**, 4

Crofter is the name given to the farmers who hold land or crofts in the more sheltered glens of the Scottish Highlands, **3**, 128, 138 and 140

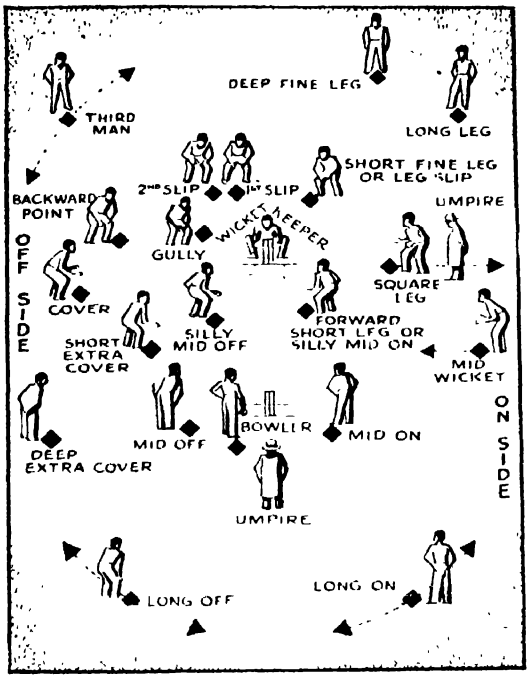
Croll, James (1821–90). Son of a Scots stonemason, he was appointed keeper of the Andersonian Museum in Glasgow. His famous book *Climate and Time* appeared in 1875 and he wrote much about the glacial periods.

Cromarty is a seaport on a firth of the same name in the north of Scotland.

Cromarty Firth is an inlet on the east coast of Scotland, **3**, 134

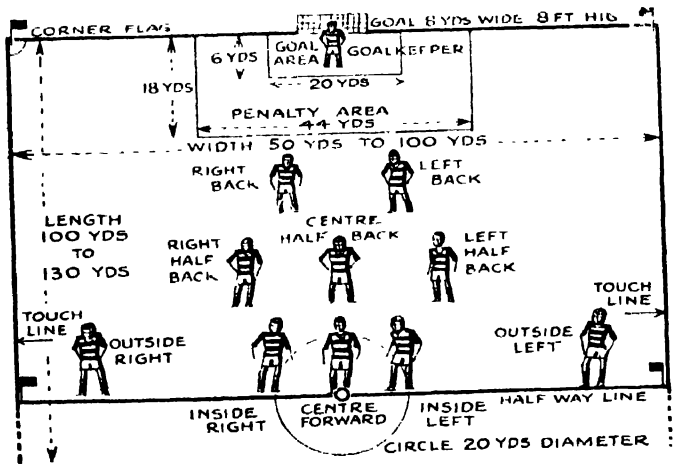
Crome, John (1769–1821). A great

TWO OF OUR NATIONAL GAMES





In the left-hand diagram the names of the recognised fielding positions in cricket are shown. There are, of course, more than eleven fielders shown here, but in actual play the captain or bowler decides in which of these positions he will place his nine fielders (apart from bowler and wicket-keeper). On the right is an illustration of Law 39 relating to the rule when a batsman is out "*leg before wicket*" (see **9**, 401). Cricket is probably the oldest of our outdoor games and its origin is uncertain though some form of bat-and-ball game was played in the thirteenth century. The ruling authority to-day is the Marylebone Cricket Club (M.C.C.), established in 1787 and moving to the present headquarters at Lord's, St. John's Wood, in 1814. The rules, which have been changed from time to time, were first drawn up in 1774, and only underhand bowling was allowed until 1835.





Specially drawn for this work.

Two games played by many and watched by thousands are *Cricket* (see p. 96) and *Association Football* (see *Football*). In this drawing are shown (left) positions of a football team lined up for the kick-off. On the right is illustrated the *offside* position, a rule which, like l.b.w. in cricket, is often the subject of debate and argument

English artist, he devoted his life to painting scenes in East Anglia, **7**, 90
Picture: **7**, 88

Cromer. A Norfolk coastal resort with an extensive crab fishery. It is 24 miles north of Norwich, **3**, 60

Cromlech. A prehistoric burial chamber consisting of two or more uprights and a capstone on top. Examples which still stand in Britain are Kit's Coty House in Kent and King Orry's grave in the Isle of Man. There are others in Wales and many in Ireland. The archæological term is Dolmen.

Crompton, Samuel (1753–1827). Born at Bolton, Lancs., he invented the spinning "mule" in 1779 which enabled a finer and stronger cotton thread to be spun. It was the first spinning machine to be entirely mechanical and made possible the manufacture of muslin.

Cromwell, Oliver (1599–1658). Known as the Lord Protector. Played a chief part in the struggle between the English Crown and Parliament. He led the Roundheads, **2**, 162 *et seq.*, 407
Pictures: Cromwell at Naseby, **2**, 161
Cromwell at the "Blue Boar," Holborn, **2**, 165
Oliver Cromwell's House, **3**, 66
Colour Plate: Oliver Cromwell becomes Lord Protector, **2**, *facing* 157

Cromwell, Richard (1626–1712). The third son of Oliver Cromwell. He was made Lord Protector in 1658 during that period in our history known as the Commonwealth, **2**, 165, 407

Crone means an old woman; a hag. On the other hand, we use the word "crony" to mean a familiar friend or chum.

Crookes, Sir William (1832–1919). A Londoner by birth, he was the first scientist to observe the flight of electrons from which has come our knowledge of radio-activity, **7**, 372, 409
Picture: **7**, 374

Crooksbury Hill. A beauty spot of Surrey, overlooking the village of Waverley.
Picture: **1**, 315

Crop-spraying by Helicopters is a modern method of destroying pests, **1**, 393

Crosby is a town on the seacoast of Lancashire, near Liverpool. It has famous schools.

Crosier is the name given to the pastoral staff of a bishop, carried by or before him as a symbol of his office.
Originally, it was shaped like a shepherd's crook to remind people that a bishop is the spiritual shepherd of his diocese. (*p.h.*)

Crossbill. A bird so named because of the curious formation of its beak which is used for climbing and finding the seeds of trees.

Cross-Bow. A weapon having a bow of iron, wood or steel across the stock. The bolts were discharged by pulling a trigger.
It was used in the twelfth and thirteenth centuries, but was displaced by the more efficient and less clumsy English long-bow.

Cross Fell is a peak of the Pennines in Cumberland near Penrith. It is 2,930 ft. in height.

Crossoptilon. Name given to the *Manchurian Eared-Pheasant* (*q.v.*).

Cross-Stitch is a form of sewing when the stitches all slant in the same direction. It is used in working tapestry, **8**, 389
Picture: **8**, 390

Croton Dam. This is one of the sources of the water supply of New York City, U.S.A., **6**, 251

Crow is the name given to a tribe of birds. It includes the crow, raven, rook, jay, magpie and jackdaw.

Crowborough. Small Sussex town near Ashdown Forest.

Crowborough Beacon. A point in Sussex which reaches a height of 800 ft., **3**, 34

Crowe, Fyre (1824–1910). Well-known British artist, he was closely associated with the novelist Thackeray.
Picture: **7**, 138

Crowfoot is the botanical family name for buttercups, **1**, 301

Crowland (sometimes spelt Croyland) is a historic small town of Lincolnshire. It is famous for a curious three-sided bridge and for the ruins of an abbey.
Photo-tone Supplement: Bridges, Big and Little, **5**, *between* 64 and 65.

Crown is the name given to a 5s. piece.
Pictures. **8**, 298, 306

Crown. The official head-dress worn by a king or queen. A laurel crown was granted by the Greeks to winners in the Olympic games. Probably the oldest crown in Europe is the iron crown of Lombardy, dating from 591. The kings of England wore crowns before the Norman Conquest. (*p.h.*)

Crown Derby, a famous porcelain made at Derby where the first factory was opened in 1750.

Crown Jewels. A collection of crowns, sceptres and other precious ornaments kept in the Tower of London, **9**, 330
Colour Plate: Symbols of Royalty, *Frontispiece*, **10**

Crown of the Palace, or Mumtaz Mahal, was the name given to his queen by Shah Jehan, **3**, 328

Crow's Nest Pass is in the Rocky Mountains of Canada. It is in the province of British Columbia. Coal was found here during the nineteenth century. A main line of the C.P.R. crosses the Rockies here, **3**, 158

Crowthorne is a small town of Berkshire, near Wokingham. Near by is Wellington College.

Croydon is a large borough and residential district of Surrey now part of the Greater London area. It has a famous airport and school (the "Whitgift"). Its airport was in great use prior to the last war, as well as during the war, but with the establishment of Heathrow (London Airport) and other airports, Croydon is now much less used.

Crozier, Captain, commanded the ship *Terror* in Sir John Franklin's expedition to explore the North-west Passage (1845). He and his companions died in the attempt, **2**, 303

Crucible. A pot-shaped vessel in which solid substances are melted or heated. Crucibles are made of fireclay, carbon, lime, porcelain or platinum. The last is only used for small crucibles employed in laboratories.

Cruden, Alexander (1701–70). Great English scholar. Author of the well-known *Bible Concordance*.

Cruikshank, George (1792–1878). Celebrated caricaturist who illustrated the works of Scott, Dickens and other authors.

Cruise of the Bacchante. Title of the diary Prince George and his brother kept during their famous voyage and afterwards published, **2**, 230

Crummock Water is the name of one of the lakes in the English Lake District.

Crusades. These were campaigns organised in the eleventh, twelfth, and thirteenth centuries by the Christian princes of Europe to win the Holy Places in Palestine from the Saracens, **2**, 102, 404, **4**, 190
Pictures. Richard I and Saladin at Ascalon, **2**, 102
Peter the Hermit Preaching, **2**, 407
The Kadikekalasi, **4**, 176
Aleppo, **4**, 175
A Former Guardian of the Crusader Road, **4**, 186

Crustaceans is the name given to a group of water-loving animals. Crabs and lobsters are examples.
—the Age of Crustaceans, **1**, 13

Cryolite is the name of a greyish or white mineral, which is a combination of aluminium, sodium and fluorine. The biggest known deposits of it are in Greenland.
It is used in the manufacture of aluminium, alum and caustic soda, **6**, 132

Crypt. Name given to underground chambers in places of worship, used either for religious services or for burials, **7**, 297
Picture. **7**, 297

Crystal Brook drops a thousand feet down a wall of rock to Buffalo Gorge in Mount Buffalo National Park, Victoria, Australia, **3**, 236

Crystal Palace. First built in Hyde Park for the Great Exhibition of 1851. Removed to Sydenham where it remained for more than eighty years until destroyed by fire in 1936, **6**, 214
Picture: **2**, 214

Crystals are formed by the solidification of substances from their solution in a liquid or gaseous state. Some of the most perfect crystals are found among the minerals owing to the extremely slow rate at which these have been formed, *e.g.*, quartz or rock crystals, to which the name crystal was first applied.

Csàrdas is the name of a famous national dance of Hungary. Its name comes from the word *csarda*, meaning an inn or tavern.
Picture: **4**, 97

C.S.I. means Companion of the (Most Exalted Order of the) Star of India.

Csikos are the Magyar cowboys of the plains of Hungary, **4**, 4, 93
Pictures: The Hortobagy Plain, **4**, 3
A Son of the Puszta, **4**, 103

C.T.C. means Cyclists' Touring Club.

Ctesiphon was an ancient city of Mesopotamia, standing on the River Tigris, **5**, 73

cu. or **cub.** means cubic.

Cuba is a large island of the West Indies. It has a great wealth of timber and is famous for its sugar and tobacco. Havana is the capital of the Cuban republic whose vast deposits of iron ore are held in reserve by American companies, **2**, 278; **4**, 306, 388
Pictures: A Havana Swimming Pool, **4**, 309
Harvesting Sugar-cane, **4**, 309

Cubbuk Barrage. This is a Turkish dam which was built to assure Ankara, the Turkish capital, of a good water supply, **4**, 160

Cubic. Having length, breadth and height. A cubic foot of anything is a square-cornered block measuring a foot each of the three ways. Every solid body must have cubic contents.

Cubit. This was an ancient measure of about 18 in., the length of the forearm from the elbow to the tip of the middle finger.

Cuchia. Name of an eel-like creature found in India. It lives at will on the land or in water.

Cuckoo. A summer visitor to Great Britain, arriving in April. The eggs are laid in the nests of other birds, **1**, 175, 181
Pictures The Young Cuckoo, **1**, 180, 181
Colour Plate, **1**, *between* 160 and 161 (Plate 1)

Cuckoos Mate. Popular name for the bird known as the *Wryneck* (*q.v.*)

Cuckoo-Pint. This hedgerow plant is related to the arum lily. It has arrow-shaped leaves and produces a flower stalk in the form of a purple column. The berries are very poisonous, **1**, 305, 344; **8**, 244
Pictures. Hedge-plant Cuckoo-Pint, **1**, 350
Cuckoo-Pint Fruit, **1**, 351
Colour Plate: **1**, *between* 304 and 305 (Plate 3)

Cudbear is a powder used in dyeing. It is prepared from a form of lichen, **8**, 389

Cudweed is a small wild plant growing on heaths and in dry places. It has narrow pointed leaves, the flowers being green and glove-shaped with yellow spikes.

Cugnot, Nicholas Joseph. A French engineer, he put the first traction engine on the road in 1763, **5**, 161
Picture: The Very First Steam Lorry, **5**, 161

Cui (1835-1918). Notable Russian musical composer, **7**, 187

Cuillins, The. Are highlands on the Isle of Skye, Inner Hebrides.
Picture: **3**, 137

Cuisine. A term applied to the kitchen and to cookery.

Culinary means something belonging to the kitchen or the art of cookery. Culinary utensils are saucepans, pans and other things used by a cook in her work.

Cullawine was the name given by the aborigines of Australia to the Koala (*q.v.*), **3**, 245

Cullen is a town of Banffshire, Scotland. It stands on Moray Firth and has fishery interests.

Cullinan is a diamond-mining town of the Transvaal. It gave its name to the Great Cullinan Diamond.

Culloden Moor is near Inverness, Scotland. It was the scene of the Battle of Culloden, 1746, **3**, 124
Picture. **3**, 126

Culloden, Battle of (1746). Fought on Culloden Moor, near Inverness, and marked the final destruction of the Jacobites who had risen in the "Forty-five" rebellion, **2**, 181, 409
Pictures Rebel Hunting after Culloden, **2**, 183
Culloden Moor, **3**, 126

Culross is a town of Fifeshire, Scotland, standing on the Firth of Forth. It is a touring and holiday centre.

Cum is the Latin for "with." It is often used between the names of two parishes that have been united or are served by the same clergyman. A share is said to be cum dividend when its price includes a dividend which will be paid shortly

Cumberland is a county on the north-west of England. It includes part of the English Lake District and has some of our highest peaks. Its coalfields at Whitehaven run under the sea, **3**, 90

Cumberland Bay is on the south-eastern coast of Baffin Land. It was explored by the navigator John Davis, **2**, 296

Cumberland Valley is in the state of Victoria in the Commonwealth of Australia. Here, on Forests Commission land, grow some of the tallest trees in the Commonwealth.
Picture **3**, 201

Cumberland, William Augustus, Duke of (1721-65), is best known for the ruthlessness with which he put down the Jacobite rising of 1745 and which earned for him the name "Butcher," **3**, 126

Cumbrae is the name of two islands in the Firth of Clyde.

Cumbre Pass is in the Andes on the frontier between Chile and Argentina. There is a famous statue of Christ here, **4**, 321
Picture. **4**, 327

Cumnock is the name of two mining towns of Ayrshire, Scotland, New Cumnock and Old Cumnock. They are a few miles apart.

Cumulus Clouds are seen more often in summer than in winter. They are of the heaped-up type, **5**, 9
Picture. On a Summer's Day, **5**, 9

Cunard White Star Line is an amalgamation of two famous shipping companies. The Cunard Line began as the British and North American Royal Mail Steam Packet Co. in 1840, while the White Star Company began in 1871, **8**, 32
Photo-tone Supplement: Ships To-day and Yesterday, **5**, *between* 272 and 273
Colour Plates: "Queen Elizabeth," **5**, *facing* 256
Ships' Funnels and House Flags, **5**, *facing* 257
See also *Ocean Greyhounds and River Whippets*, **5**, 249 *et seq*

Cuneiform. Ancient writing composed of wedge-shaped forms which was developed by the Sumerians and was adapted by the Babylonians, simplified in some ways by the Assyrians, and further reduced and simplified by the Persians.
The name was first given to this form of writing in 1700 but it took many years before all the different forms of cuneiform were deciphered, **9**, 11
Pictures: Cuneiform Inscriptions, **9**, 5, 6

Cunningham, Viscount (born 1883), Admiral of the Fleet, was Commander-in-Chief of the Mediterranean Fleet which led the attack on the Italians from 1941 onwards. Became First Sea Lord in October 1943 and received a peerage in 1945. The Order of Merit was conferred on him in June 1946, **8**, 18

Cupar is a town of Fifeshire, Scotland. It is the centre of an agricultural district.

Cupellation is the name given to the process of separating silver from lead in ores which contain both metals, **6**, 138

Cuprammonium Process is one of the three main methods of making rayon, **6**, 349

Cupro-Nickel. An alloy first used for British coinage in 1946 to replace the former silver coinage, the new coins coming into circulation early in 1947. These new coins contain 75% copper and 25% nickel. The silver coins previously in circulation contained 50% silver, 40% copper, 5% nickel and 5% zinc. Over a period of years it is expected that about £30,000,000 will be saved by the use of Cupro-nickel.

Curaçao is an island of the Dutch West Indies. See *Netherlands Antilles.*

Curassow. Almost the size of a turkey, this bird is found in Central and South America.
Picture: **1**, 178

Curator. One who has the care or guardianship of some institution; for example, of a museum, public library or art collection.

Curfew was instituted by William the Conqueror and repealed by Henry I, but the bell continued to be rung in many parts, and is still heard occasionally.

Curie, Marie (1867-1934). Daughter of a Polish professor, she married Pierre Curie.
They extracted the first radium salts. After the death of her husband Mme. Curie succeeded in isolating radium, **7**, 386; **1**, 392
Picture **7**, 386

Curlew. A long-legged wading bird found round British coasts in summer. It nests on moors and mountains.
Picture **1**, 171

Curragh, The. Name of a tract of rolling country in Kildare, Eire. It is a military centre.

Currants. (1) Dried currants, as imported, are the fruit of a variety of small grape.
(2) In our gardens we grow black currants, red currants and white currants, the last-named chiefly for dessert.

Currency means the coins and paper money used in a country as a medium

of exchange. Our silver and copper coins are metallic currency, Bank of England notes for £1 and 10s. being paper currency.

Cursive, as applied to writing, is writing in which the letters "run together," as distinct from being written separately. Cursive writing is usual for letters and general use, **8,** 185

Curtis, Thomas. A daring Cornish miner, he sank a shaft below high-water mark on the shore near Penzance, 1778 to 1781, **6,** 130

Cuscus. This strange animal is a native of Australia. It is about the size of the cat and is known for its offensive smell. It is pouched and belongs to the phalanger family.
Picture: **3,** 247

Cushendall is a beautiful Vale in County Antrim, Northern Ireland, where there is a village of the same name.
Picture: **3,** 150

Custard Apple. Name of a small tree found in South America. Its fruit yields a valuable medicine, **1,** 334

Custom House, London, is the place at which customs duties on cargoes entering the Thames are collected. The present building dates from 1814.

Cutch is the name of one of the Indian States. Its capital is Bhuj and it has a native ruler.

Cutch is the name gold-beaters give to the parchment papers between which they place squares of gold.
Picture: **6,** 98

Cutlery means knives, scissors, razors and some other cutting tools, taken collectively. The word does not cover carpenters' tools. The chief British centre of cutlery manufacture is Sheffield, Yorkshire

Cuttings. The stock of many plants is propagated or increased by taking cuttings or slips, **1,** 277

Cuttlefish. A creature having eight arms with two other limbs for the clutching of its prey. It is somewhat similar to the octopus, **1,** 210

Cutty Sark. A famous British Clipper built in 1870 and was engaged on the China–London run. Later she was employed in the Australian wool trade and ended her days as a training ship in Falmouth Harbour, **8,** 30
Picture: **8,** 33

Cuvier, Georges (1769–1832). A great French anatomist, or student of animal form. In one of his works there were included 5,000 varieties of fishes.

Cuxhaven, at the mouth of the River Elbe, is a port and town of Germany, close to Hamburg. It accommodates ocean liners.

Cuyaba is a town of Brazil, on a river of the same name.

Cuyp, Albert (1620–91). Well-known Dutch painter. He had an amazing mastery of cloud and sky effects, **7,** 52

Cuzco is a province in the southern part of Peru. Its capital (of the same name) was the chief city of the ancient Incas, and it has many ruins of their empire, **4,** 326

C.V.O. means Commander of the Royal Victorian Order.

Cwm is a Welsh word meaning a valley among the hills. It may be compared to the English word combe.

Cwt. means a hundredweight, *i.e.*, 112 lb.

Cyclades is the name given to a cluster of hilly islands belonging to Greece. They are found in the Ægean Sea.

Cycling came into vogue with the introduction of the modern safety bicycle about 1880, though the first cycling club, the Pickwick, was founded in 1870 and the Cyclists Touring Club in 1878. Dunlop's invention of the pneumatic tyre in 1888 brought a tremendous increase in its popularity. See *Bicycle.*

Cyclone. A cyclonic system is caused by a heated column of moist air which, as it advances, brings rain and wind, **5,** 22; **9,** 352

Cyclopes figure in the mythology of Ancient Greece. They were a race of one-eyed giants, the sons of Heaven and Earth, and were slain by Apollo.

Cyclops are creatures of ditches and ponds included with the crustaceans. They swim swiftly and carry their eggs in small pouches.

Cyclotron. An apparatus or machine sometimes termed an atom-smasher, used in atomic-energy stations for obtaining deuterons or hearts of hydrogen atoms by whirling them at tremendous speed in a very powerful magnetic field. The cyclotron at Harwell, and at other atomic energy stations in different countries are used to produce artificial radio-activity and to impart it to other materials.
Picture: Inside a Cyclotron, **7,** 405

Cygnets. Name given to the young of the swan. They are in colour dark grey, **1,** 201

Cygnus (or the Swan) is the name of a group or constellation of stars.

Cylinder is a straight round body with parallel circular ends and of the same shape and size from end to end.

Cymbal is a musical instrument of brass shaped something like a soup-plate. Cymbals are used in pairs, one in each hand, and beaten together, producing a sharp, ringing sound. They were made as long ago as the time of the Old Testament stories. See *Orchestra.*

Cynewulf (about 750). An Anglo-Saxon poet, believed to have been a Northumbrian monk.

Cynic. One who tends to sneer at what ordinary people regard as good. The original Cynics were a school of ancient Greek philosophers, founded about 400 B.C.
One of their leaders was Diogenes, who is said to have made a barrel his home.

Cypress. Evergreen trees of the conifer group. They have a very erect habit, **1,** 331, 414
Pictures: **1,** 314, 413

Cypripediums are members of the orchid family.
Pictures: Lady's Slipper Orchid, **1,** 363
Slipper Orchid, **1,** 368

Cypris is the name given to a race of tiny bivalve creatures living in ponds. They belong to the crustaceans.

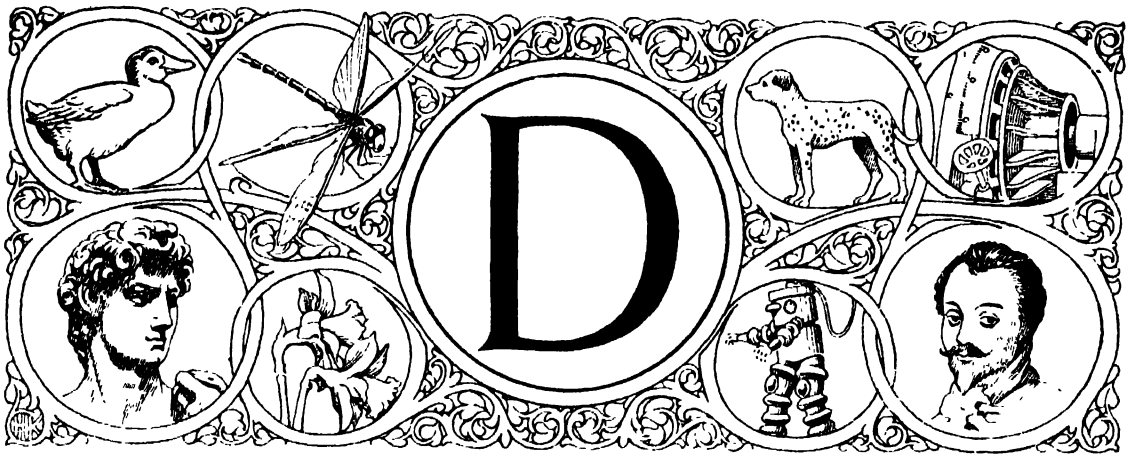
Cyprus. A large island in the eastern Mediterranean and a British colony. The people are mainly peasant farmers, craftsmen, and fishermen. Nicosia is the capital, **3,** 388; **4,** 362
Picture: **3,** 390

Cyrenaica. A part of Libya in north Africa, it was Italian colonial territory until 1943, but now has its own government. Its chief towns are Benghazi, Derna, Tobruk and Cyrene, **4,** 166

Cyrus the Great (died 528 B.C.). Founder of the Persian Empire, he subdued all Asia Minor, Babylon and Palestine, **2,** 2, 402; **4,** 202
—grandson of King Astyages, **2,** 6
Pictures: As a Boy, **2,** 7
The Plans of Harpagus, **2,** 8

Czar, or Tsar, meaning emperor, was the title given to the former sovereigns of Russia. The last Czar was overthrown in 1917, **2,** 239

Czechoslovakia is a republic of Central Europe. Originally created after the war of 1914–18 from provinces of the old Austro-Hungarian Empire, it was invaded by Germany in 1939 and remained under German rule until the end of the Second World War when it regained its independence. Prague is the capital and the country has a population of over 12 millions. The country has an important agricultural industry producing grain, sugar beet, and hops. There are great forests and considerable mineral riches and industrial enterprises, **2,** 246; **4,** 90 *et seq.*
Pictures: The Golden City of Prague, **4,** 91
Golden Prague's Fine Old Bridge, **4,** 92
Bratislava, Where Frontiers Meet, **4,** 93
The Cathedral founded by King Wenceslas, **4,** 93
When Prague goes Gay, **4,** 94
Where Napoleon was Victor, **4,** 95
Photo-tone Supplement: The Continent of Europe, **4,** *between* 112 and 113



D is the fourth letter of our alphabet, as in the Phœnician, Hebrew, Greek and Latin. The Greek symbol for it was a triangle, called Delta. We have adopted this word for a triangular area of land enclosed by two branches of a river at its mouth and by the sea.

D belongs to the group of letters called dentals because the teeth (*Latin*, dentes), or the gums near them, are used in pronouncing them; and it is also one of the mute letters. The Romans used D to represent the number 500.

It stands for Doctor in the abbreviation M.D. (medicinæ doctor = Doctor of Medicine); and appears twice as an abbreviation on a florin in D.G. (Dei gratia = by the grace of God), and F.D. (Fidei Defensor = Defender of the Faith).

d. means a penny (or pence) from the word *denarius* or *denarii*.

Dab. A salt-water fish, akin to the flounder.

Dabchick. Popular name for the common British water bird little grebe.
Special Colour Supplement: British Wild Birds, **1**, *between* 160 and 161 (Plate 4)

Dace. Small roach-like fish silvery in appearance and common in many English rivers
Special Colour Supplement: British Fresh Water Fishes, **8**, *between* 256 and 257 (Plate 3)

Dachshunds. Small dogs with long bodies and short legs. They are of German origin, **8**, 315

Daddy-Long-Legs. Otherwise known as the crane fly; one of the most troublesome of British insects, it is the parent of the leather-jacket, **1**, 258
Pictures: Crane Fly, **1**, 259
Grub of the Crane Fly, **1**, 259

Dædalus. A mythical Greek mechanic who built the Cretan labyrinth and invented mechanical wings.

Daffodil. This beautiful flower, of which there are many varieties, is one of the most prominent of the bulb-grown spring flowers. It is the emblem of Wales, competing for that honour with the leek, **8**, 280. (*p.h.*)
Pictures: Gathering Blooms, **1**, 275
Daffodils and Narcissi, **8**, 279

Dafur is a district of the Sudan. It produces wheat, cotton and other valuable crops.

Da Gama, Vasco. See *Gama, Vasco da.*

Daghestan is a country of the Soviet Union situated on the Caspian Sea.

Dago is a sailor's nickname for a dark-complexioned person, especially one of Spanish, Portuguese or Italian descent.

Dagoba is the name given in Ceylon and other countries of the East to a domed building containing religious relics, **3**, 367
Picture: **4**, 218

Daguerre, Louis Jacques (1789-1851). He was born in France and invented the diorama. As a pioneer of photography he produced portraits that were named daguerreotypes, **9**, 377

Dah. A heavy knife used by the Karen people of Burma, **4**, 218

Dahlia. Plants for bedding out during the height of summer. There are tall and dwarf types, growth springing from underground tubers, **8**, 278

Dahomey is a colony of France. It is situated on the coast of West Africa. See *West Africa, French.*

Dail Eireann (*pron.* doil āran) is the name of the House of Representatives in the Parliament of Eire, equivalent to the House of Commons. The upper house is known as the Senate or Seanad Eireann, **3**, 153

Daily Courant was the name of the first English daily newspaper, which began publication in 1702. It was also the first newspaper to issue an evening edition in 1706 containing the news of the victory at Ramillies, **9**, 208

Daily Universal Register. Newspaper, first published by John Walter in 1785, which changed its title to *The Times* in 1788 and became the foremost newspaper in the world, **9**, 209

Daimler, Gottlieb (1834-1900). Of German birth, he was employed by Sir Joseph Whitworth and afterwards by Dr. Otto. It was his inspiration to apply the Otto internal combustion engine to road vehicles.

Daisy. One of the best-known of British flowering plants. The name is a shortened form of Day's Eye, **1**, 300
Colour Plate: **1**, *between* 304 and 305 (Plate 4)

Daisy Stitch is one of the embroidery stitches used for ornamenting purposes, **8**, 413
Picture **8**, 414

Dak is the post or inland mail in India. The word is also applied to a mode of travelling by palanquins, carried by dak-men.

Dakar is an important French port and naval centre of West Africa, **3**, 380

Dakota. A district of the U.S.A. It is divided into two states, North Dakota and South Dakota.

Dakota. Name of a race of Red Indians, a branch of the great Sioux tribe. They once ranged the prairies with tomahawks and bows and arrows but now live in Indian reservations.

Dakota. The name of a well-known type of passenger aeroplane largely used for long-distance flights.

Daladier, Edouard. French politician, one of the leading figures in the negotiation of the Munich Agreement of 1938, **2**, 413

Dalai Lama is the name of the priestly ruler of Tibet, **2**, 389; **4**, 238

Dalkeith. A town of Midlothian, Scotland. It stands on the River Esk and has various industries.

Dallas is a city of Texas, U.S.A. It has interests in cotton and agricultural products. It is an important railway centre.

Dalmatia is the name given to that part of Yugoslavia which extends along the eastern shores of the Adriatic Sea, **4**, 90, 156

Dalmatian. Name of a breed of dog. It has a white coat with black or brown spots. Originally, it was trained to follow carriages. It is active and muscular, a good runner, and is a fine watchdog.

Dalnaspidal is a small town on the route to the Highlands of Scotland. Its station is 1,484 ft. above sea level, the highest point to which an ordinary railway is carried in the British Isles, **3**, 124

Dalry. A town of Ayrshire, Scotland. It is noted for its tweeds.

Dalton-in-Furness is a town of Lancashire and a centre for iron-ore. Close at hand is the famous Furness Abbey.

Dalton, John (1766-1844). Born near Cockermouth, of a Quaker family. A great chemist and natural philosopher. He also contributed valuable knowledge on the subject of Meteorology and formulated a theory on atomic chemistry, **7,** 360
— as an observer of the weather, **5,** 2

Damaraland. A district of south-west Africa. It stretches from the sea towards the Kalahari Desert. Its chief town is Windhoek.

Damascus, capital of Syria, is thought to be the oldest city in the world. It is still a great trading centre, **4,** 174, 202, 367
—Lawrence of Arabia enters Damascus, **2,** 387
Picture. "The Street which is called Straight," **4,** 174

Damascus Gate is one of the four main entrances to Jerusalem.
Photo-tone Supplement: Scenes in the Holy Land, **4,** *between* 176 and 177

Damien, Father (1841-89). A Belgian missionary who from 1873 onwards gave his life to the care of lepers on the island of Molokai, **9,** 329

Damien, John. An Italian who was an early experimenter with gliders. He made an unsuccessful attempt to fly from Stirling Castle, **5,** 183

Damietta is an Egyptian port on the Mediterranean shore near the mouths of the Nile River, **4,** 195

Damocles was a flatterer of the Syracusan tyrant Dionysius the Elder, who suspended a sword over his head by a single hair, while Damocles sat at a richly laid table.
This was to illustrate the kind of happiness possessed by princes, through money and position.

Damodar. The name of a river in India. It rises in the province of Bihar, and flows south-eastwards to join the River Hugli. The valley of the Damodar is the chief home of India's iron and steel industry, **3,** 314

Damory's Oak. Name of a famous tree that grew near Blandford, Dorset, **1,** 331

Dampier, William (1652-1715). British navigator who explored coasts of Australia and New Guinea in 1699. His name is commemorated in Dampier Strait and Dampier Archipelago. On his final voyage 1708-11 he rescued Alexander Selkirk, original of *Robinson Crusoe,* from Juan Fernandez. He wrote several books, including a *Discourse on Winds* in 1700, **5,** 1
he was the first Englishman to give a detailed account of certain parts of Australia, **3,** 202

Damson. A variety of small plum, usually oval in shape and much used for preserving.

Dance, Sir Charles. He ran an early steam coach between Gloucester and Cheltenham, **5,** 165

Dandelion. A common plant bearing bright yellow flowers. The seeds are scattered by means of feathery spikes on which they float through the air, **1,** 301, 333
Pictures. Dandelion Clocks, **1,** 333
Seeds in Flight, **1,** 375
Colour Plate. **1,** *between* 304 and 305 (Plate 2)

Dandy Brush. A brush with long, stiff bristles used when grooming horses, ponies and donkeys. It is also suitable for the grooming of goats, **8,** 319

Dandy Dinmont. Name of a breed of small terrier dog. The animals originated on the Border between England and Scotland.
Picture: **10,** 111

Dane, Clemence. Modern British writer, she has produced both books and plays. *The Babyons* is one of her well-known stories, **7,** 264

Danegeld. A tax imposed in England for the purpose of bribing the Danes. It was levied on land, **2,** 90

Danes are natives of Denmark Many centuries ago Danish sea raiders crossed the North Sea and harried English coastal regions, **2,** 85, 404
—the Triumph of the Danes, **2,** 90
Pictures: The Danes coming up the Channel, **2,** 86
The Camp of Guthrum the Dane, **2,** 87
The Danes in England, **2,** 90
Captured by the Danes, **2,** 91

Dannemora is a place in Sweden having large deposits of magnetite iron ore, **6,** 42

Dante, Alighieri (1265-1321). One of Italy's noblest sons and greatest poets, **4,** 149; **7,** 4, 125
Picture. **7,** 125

Danti was a little-known experimenter of the sixteenth century. He constructed a glider, **5,** 83

Danube, which has a length of 1,800 miles, is the second largest river of Europe. It rises in the Black Forest and empties into the Black Sea, **4,** 87 *et seq.*
Pictures: Floating Flour Mills on the Danube, **4,** 102

Danushkodi. A port at the southern tip of India linked with Ceylon by steamer, **3,** 316

Danyers, Sir Thomas. He rescued the English standard at Caen six hundred years ago and was rewarded by the Black Prince who gave him the lands of Lyme Hall, **3,** 410
Picture: **3,** 408

Danzig. See *Gdansk.*

Daphne. The Mezereon variety produces its pretty pink flowers before the leaves unfold. The red berries of this dwarf shrub are poisonous, **1,** 344

Darbar Sahib is the Golden Temple of Amritsar, **3,** 337
Picture: **3,** 339

Darby, Abraham. A pioneer in cast iron, he set up a foundry at Coalbrookdale in 1709, **6,** 46

Darby and Joan. Characters in a poem by Hy. Woodfall in 1735 and now applied to any old affectionate couple.

Dardanelles. A narrow strait separating Europe from Asia and connecting the Ægean Sea with the Sea of Marmora. Known in ancient times as the Hellespont, **4,** 158
—the bridging of the Dardanelles, **2,** 24

Dar es Salaam. The capital and chief port of Tanganyika Territory in British East Africa, **3,** 370

Dargo High Plains are rolling grasslands of the Australian Alps where cattle graze in the summer months.
Picture: **3,** 229

Dargomizhsky (1813-69). A musical composer, he helped to create a distinct Russian style, **7,** 187

Darius the Great (522-485 B.C.). Ruler of the Persian Empire. He failed to prevail against the Athenians by whom he was defeated in the battle of Marathon, **2,** 13, 21; **4,** 202; **5,** 54
— he erected a triumphal monument inscribed in three languages which eventually became the key to the lost Babylonian language, **9,** 15

Darius (336-330 B.C.) King of Persia, the third of this name, who was several times defeated by Alexander the Great, **2,** 42

Darjeeling is a town of West Bengal situated in the Himalayas. It is the hot weather resort of people from Calcutta and a centre of the tea industry, **3,** 348
Picture. Crowned with Eternal Snows, **3,** 351

"Dark Continent," The. This was a name used to describe Africa in the days when that continent had been but little explored, **3,** 276

d'Arlandes, Marquis A French aeronaut, he ascended in a fire balloon in 1783, **5,** 185
Picture. **5,** 188

Darlaston, with iron, steel and other heavy industries, is a town of Staffordshire.

Darling. A river of Australia about 1,150 miles in length. Its source is in Queensland and it unites with the Murray River, on the borders of Victoria, **3,** 230
Pictorial Map **3,** 243

Darling Downs is the name of a high plateau district of Queensland, Australia, famous for its sheep and farmlands.

Darling, Grace (1815-42). One of the great heroines of British history, her father was keeper of the Farne Lighthouse. With him she rowed to the wreck of the *Forfarshire* on September 7th, 1838.

Darling Harbour. An inlet of Sydney's great harbour, Port Jackson. Here ocean-going liners can berth alongside the main railway to the south and west.
Picture: **3,** 232

Darling Range is the best-known highlands of Western Australia. They are about three hundred miles long and run parallel to the south-western coast at a distance of about twenty miles from the sea. The highest peak is 1,910 ft.
Photo-tone Supplement: Two Australian State Capitals, **3,** *between* 240 and 241

Darlington, County Durham, is a railway centre. It has engineering interests, iron works and textiles, **3,** 82

Darlingtonia. A plant of N. America, its stalks hollow and formed as traps for flies.
Picture: **1,** 344

Darmstadt is an ancient town of Germany, capital of the province of Hesse Darmstadt.

Darning is an important part of needle-

work and one should use the smallest-eyed needle that will take the thread, **8**, 413
Darning is used in embroidery to fill up background, **8**, 413
Pictures: Before cross-threads are darned in; Filling in with darning, **8**, 411
Embroidery Darning, **8**, 414
Darnley, Henry Stuart, Earl of (1545–67). Cousin of Mary, Queen of Scots, and later her second husband. He was murdered in Edinburgh, probably at Bothwell's instigation, **2**, 152
Picture: Darnley arriving to kill Rizzio, **2**, 151
D'Arontal is the name of an Indian chief of the days of Champlain, the French explorer of parts of Canada. His name is said to be handed down to us in Toronto, the capital of Ontario.
Picture: **3**, 185
Dart. A river of Devon. It rises on Dartmoor and enters the sea at Dartmouth, **3**, 51
Darter. A water-loving bird found in the hotter parts of America; it can swim with its body beneath the water, only the head being seen.
Picture. **1**, 196
Dartford, Kent, on the River Darent, is an ancient town noted for its engineering and zinc works and for paper-making, **3**, 18
—one of the early paper-mills in England was established at Dartford in 1590, **6**, 329
Dartmoor. Tract of high moorland in Devon a little more than twenty miles each way, **3**, 44
—once all forest up to 1,200 ft. level, **1**, 317
—a prehistoric village, **7**, 279
Pictures: At a Round-up of Wild Ponies, **1**, 90
Looking across Dartmoor from Hyne Down, **3**, 42
A Hut Circle on Dartmoor, **7**, 285
Grimspound, **7**, 281, 289
Dartmouth is a town of South Devon Here is the college which our naval cadets attend, **2**, 243, 263
Darwen is a cotton and industrial town of Lancashire within a short distance of Blackburn.
Darwin is an important port in the extreme north of Australia, in the Northern Territory. Its airfield is also a link in the main route from Britain, Europe, and Southern Asia, **3**, 226
Pictorial Map **3**, 242
Darwin, Charles (1809–82). Born at Shrewsbury, by the age of eight he had developed his taste for natural history. His work, the *Origin of Species* (published in 1859), marked a turning point in the history of European thought. He made a famous voyage in the *Beagle*, **2**, 342 *et seq.*
Pictures: A Naturalist in the Forest, **2**, 342
Arrested in a Foreign Land, **2**, 343
The Harvest of the Depths, **2**, 345
In his Cabin aboard Ship, **2**, 347
Dasasanedh is the name of one of the chief ghats, or flights of steps down to the River Ganges, in Benares, **3**, 355
Dasyure. One of the marsupials or pouched animals. It is found in Australia and New Guinea and lives chiefly in trees, feeding on such birds and small creatures as it can catch. The fur is brown, spotted white, the animal being about the size of our domestic cat.
Datchet. A small town of Buckinghamshire, near Slough and Windsor. It stands on a beautiful reach of the River Thames
Date or Calendar Line. See *International Date Line.*
Date Palm. A most valuable tree growing in North Africa, Arabia and Persia, where its fruit forms a principal food. More than half of the date is pure sugar. The palms grow to a height of 60 ft. and produce immense crops, **1**, 310
Daudet, Alphonse (1840–97). A celebrated French novelist, **4**, 16
Daughter, Earl Haldan's. A Poem by Charles Kingsley, **9**, 110
Daulatabed was a great stronghold built by the Moghul Emperor, Aurangzeb, **3**, 326
Dauphin (*pron.* Dohfan) was the title borne by the eldest sons of the kings of France up to the Revolution of 1830, **2**, 149
Daventry, Northamptonshire. A small town where boots and shoes are made. In the vicinity is the Midland Region broadcasting station.
David (about 1030–990 B.C.) Son of Jesse and a King of Israel. His friendship with Jonathan is well known and we read of him in the Old Testament. He was born at Bethlehem, **2**, 401 ; **9**, 17. (*p.h.*)
Picture **4**, 179
David. Brother of the Welsh Prince Llewelyn, **2**, 111, 112
David Copperfield is regarded as one of the best of the works of Charles Dickens. It first appeared in monthly parts, **7**, 215
Picture. **7**, 214
David I, King of Scotland (born about 1080). He came to the Scottish throne in 1124 and reigned until his death in 1153, **2**, 98
David, Jacques Louis (1748–1825). A notable French painter, he produced a wonderful portrait of Madame Récamier, **7**, 68
Picture **7**, 70
David, Jefferson (1808–89), American statesman who became President of the Southern States, U.S.A., shortly before the Civil War in America.
David, John (1555–1605) An English navigator, he was a friend of Sir Walter Raleigh. He discovered the channel known as Hudson Strait, as well as the Falkland Islands. He was killed by Japanese pirates, **2**, 296
Picture **2**, 297
David, St., is the Patron Saint of Wales, **9**, 330
Davies, William Henry (1871–1940). Well-known Welsh poet, he wrote *The Soul's Destroyer*, **7**, 156
da Vinci, Leonardo (1452–1519). A great Italian artist, sculptor and inventor. He planned both a flying machine and an appliance not unlike a modern helicopter, **4**, 19; **5**, 183; **7**, 14
Pictures. For the Mastery of the Air; Five Hundred Years Ago, **5**, 184
The Last Supper, **7**, 12
da Vinci's "Mona Lisa," **7**, 13
Davy, Sir Humphry (1778–1829). Born at Penzance, he was the son of a wood-carver. He discovered potassium, sodium, magnesium, calcium and barium. Inventor of a safety lamp, he became president of the Royal Society, **7**, 358
Picture: **7**, 362
Davy Jones's Locker is the sailor's name for the bottom of the sea.
Dawlish is a seaside resort of South Devon, **3**, 51
Dawson City. A mining centre of Yukon Territory in North-West Canada. It was founded during the Klondike gold-rush of 1897.
Dawson Creek is a town of British Columbia, Canada, on the Alcan Highway, **3**, 197
Day Book. An account book used by business firms. The day-by-day transactions are entered in this book.
Day-old Chicks is the term used to describe poultry chicks newly hatched in an incubator. One may start poultry-keeping with day-old chicks and a broody hen, **8**, 317
Day, Thomas (1748–89). An English writer, his *History of Sandford and Merton* was widely read.
Day's Eye. The real name of the flowering plant daisy.
Days of the Week are named after Scandinavian gods, **9**, 301
Daytona is a town of Florida, U.S.A. Its firm, sandy beach is used for motor racing, **4**, 294
D.B.E. means Dame Commander of the Order of the British Empire.
D.D. means Doctor of Divinity.
"D" Day is a military phrase signifying the day on which some particular operation is planned to take place. But in particular, the expression is associated with the landings in Normandy on June 6th, 1944, when the Allies began an all-out assault on Hitler's Europe, **2**, 254; **8**, 42
Picture: **2**, 255
D.D.T. is a powerful insecticide, first used in the war 1939–45. Initial letters represent its long chemical name of Dichloro-diphenyl-trichloroethene, **7**, 397
De Aar is a town of the Cape Province, Union of South Africa, and a great railway junction, **3**, 293
Dead Letter Office. When for any reason a letter cannot be delivered by a postman, it is sent back to the sender (when his address is given inside the envelope), through the agency of the Dead Letter Office, a department of the G.P.O
Deadly Nightshade. See *Nightshades*
Dead Nettle. A wild plant not unlike the stinging nettle and bearing white flowers. The leaves do not sting, **1**, 352
Colour Plate. **1**, *between* 304 and 305 (Plate 3)
Dead Sea is the name of a large lake of the southern Holy Land. So salt that bathing in its waters is difficult, there is hardly a living thing to be seen round its shores, **4**, 175
Pictures: By the Shores of the Dead Sea, **4**, 177
Deaf Adder. Name sometimes given to the slow-worm (*q.v.*).
Deal. A holiday resort on the coast of

Kent, nine miles north of Dover, 3, 34, 36

Deal. Timber obtained from fir and pine trees, 1, 416

Dearborn is an important car manufacturing centre in Michigan, U.S.A.
Picture: 4, 278

Death Adder. A dangerous snake found in the sandy parts of Australia.

Death Duties are taxes payable out of property after the death of its owner. In this country no duty is payable when a person leaves less than £2,000. Above £2,000 the rate of tax rises from 1% to 80% according to the amount left, 9, 356

Death of Roland and Oliver, The. A story from the Song of Roland, 5, 414

Death's Head Hawk Moth. See *Moth.*

Death Watch Beetles lay eggs which bore into wood and make it "wormeaten." They are particularly destructive to old oak, 9, 370

Deauville is a famous holiday resort on the coast of Northern France, within a few miles of Havre.

De Bary, Heinrich (1831–88). A great German botanist, he discovered the true nature of the lichens.

Débris means fragments; ruins; the litter left after a smash. In geology, any accumulation of broken matter, such as that which arises from the wasting of rocks and collects below them is called débris.

Debussy, Claude Achille (1862–1918). A musical composer and wonderful pianist. He greatly influenced French music, 4, 18; 7, 188
Picture: 7, 187

Decalogue is a term derived from Greek meaning "ten words" and is now used of the Ten Commandments.

Deccan (sometimes spelt Dekkan) is the name given to one of the main geographical regions of the Indian subcontinent—peninsular India south of the Vindhya Mountains. Here cotton, rice, sugar cane, and rich forests are to be found, 3, 313, 325

Deciduous is the term used for trees and plants that cast their leaves in autumn; *i.e.*, those that are not evergreen.

Declaration of Independence. Adopted by Congress of the United States of America, July 4th, 1776, 2, 194, 409; 4, 261
Pictures: Signing the American Declaration of Independence, 2, 193
Independence Hall, Philadelphia, 4, 263

Declaration of Indulgence (1672) suspended the laws then in force against Nonconformists; as a result of this John Bunyan was released from Bedford Gaol. Further Declarations were made in 1687 and 1688, 2, 168

Decoction. The extract obtained from a substance by the use of boiling water. The tea and coffee which we drink are two good examples.

Decree. An order issued by a ruler or government. The word is also used of an order made by the Chancery Division of the High Court.

Dedicate means to set apart for a religious purpose; to devote; to inscribe. A church is dedicated to God, and also in most cases to some saint.

Dee. (1) A river of north-west England and Wales some eighty miles in length. It runs into Lake Bala and on through Chester, 3, 100
(2) A river of Scotland entering the North Sea at Aberdeen. It flows past Balmoral Castle, 3, 135
(3) Another river of Scotland, emptying into Solway Firth.

Deer. This beautiful animal belongs to the family of "ruminant quadrupeds." The male deer is known as the Stag and usually has branching horns or antlers. In this country there are red deer, fallow deer and the roedeer, 1, 103 *et seq.*
Pictures: Stags putting their Antlers to the Test, 1, 103
A Caribou of the Snowlands, 1, 104
The Tale of the Stag's Antlers, 1, 105

Deer, Irish. A magnificent wild creature of Ireland. It existed after the first Ice Age.
Picture: 1, 34

Deer, Wapiti. See *Wapiti Deer.*

Deera is an important railway junction between Amman capital of Transjordan and Damascus. It is now more frequently spelt Deraa, 2, 386

Defence Highway is one of the great roads built in Australia during the Second World War. It links Alice Springs with Birdum, and so with Darwin. A second Northern Territory road built during this period was that linking Newcastle Waters with Mount Isa in Queensland, 3, 226
Pictorial Map: 3, 243

Defender of the Faith. Title first given by the Pope to Henry VIII and retained by our sovereigns ever since, 2, 142, 406

Defile. A narrow passage or way between two heights, in which soldiers may only march in column, or with a very narrow front. A long, narrow passage between hills.

Deflation means to let the air out of a bicycle tyre or balloon. Or it may be used of a person who is "puffed up," or inflated with his own self-importance; when he is proved wrong he is deflated. In a financial sense it means that there is not sufficient money among the people of a country to buy the goods offered for sale; the price of the goods has to be lowered and thus money becomes more valuable, and this is known as deflation.

Defoe, Daniel (1659–1731). Author of the immortal *Robinson Crusoe,* he is regarded as the first English novelist, 2, 179, 180; 7, 200; 9, 340
—Tobago, the original *Robinson Crusoe* Island, 3, 398
—he founded a journal *The Review,* 9, 208
Pictures: The Fire of London, 7, 199
Robinson Crusoe explaining the Scriptures to Friday, 7, 200
Daniel Defoe in the Pillory, 7, 201

deg. means degree or degrees.

Deganya B is the name of the oldest Jewish communal settlement in Palestine. It stands on the shores of the Sea of Galilee, 4, 183

Degas, Hilaire Germaine Edgard (1834–1917). Notable French artist, 4, 18; 7, 116

Degaussing is the term used to describe the fitting of continuous copper belts electrically energised round ships to protect them from magnetic mines which were first used early in the World War, 8, 22

De Groot, John. A Dutchman. There is a legend that he built John o' Groat's House in the far north of Scotland, 3, 140

de Havilland, Sir Geoffrey (born 1882), British aircraft designer, who learned to fly in 1911 on a machine of his own construction. Founded the de Havilland Aircraft Company which produced a number of famous machines and the well-known "Gipsy" series of aero engines. As Captain de Havilland won the King's Cup Air Race in 1933.
His son, Geoffrey de Havilland, was a brilliant test pilot. He lost his life in testing a new plane, the tailless jet aircraft, DH.108, believed to be the fastest machine in the world, when flying over the Thames Estuary in September 1946.
—types of aeroplanes, 5, 199, 232–3
Pictures: A Pusher Fighter Biplane, 5, 199
de Havilland Moth Minor, 5, 200
A Mosquito Bomber, 5, 207
de Havilland Dove, 5, 238
Colour Plate: de Havilland "Comet," 5, *facing* 189

Deimos is the name of one of two small satellites of the planet Mars. It is called after one of the mythological horses that drew the chariot of Mars, 8, 145

Deity means a god. By the Deity we mean the God Whom Christians worship as the Creator and Father of all—the Supreme Being.

Dekkan. See *Deccan.*

del. is often put after an artist's name on an engraving. It means *delineavit,* "he (or she) drew it."

Delacroix, Ferdinand Victor (1798–1863). A famous French artist, he was one of a school of realist painters, 4, 16; 7, 72

Delagoa Bay is to be found on the east coast of Africa, in Mozambique. Its chief town is Lourenço Marques.

Delagrange, Leon (died 1910). One of the world's earliest airmen, he flew a biplane in 1908. He was killed in a flying accident.

De La Mare, Walter (born 1873). Modern poet and novelist, he compiled a well-known collection of poetry for children, 7, 156, 274
Poems: Someone, 9, 91
Old Shellover, 9, 115

Delaware. A river of the U.S.A. flowing into the Atlantic Ocean by way of Delaware Bay and forming for part of its course the boundary between the states of New Jersey and Pennsylvania.

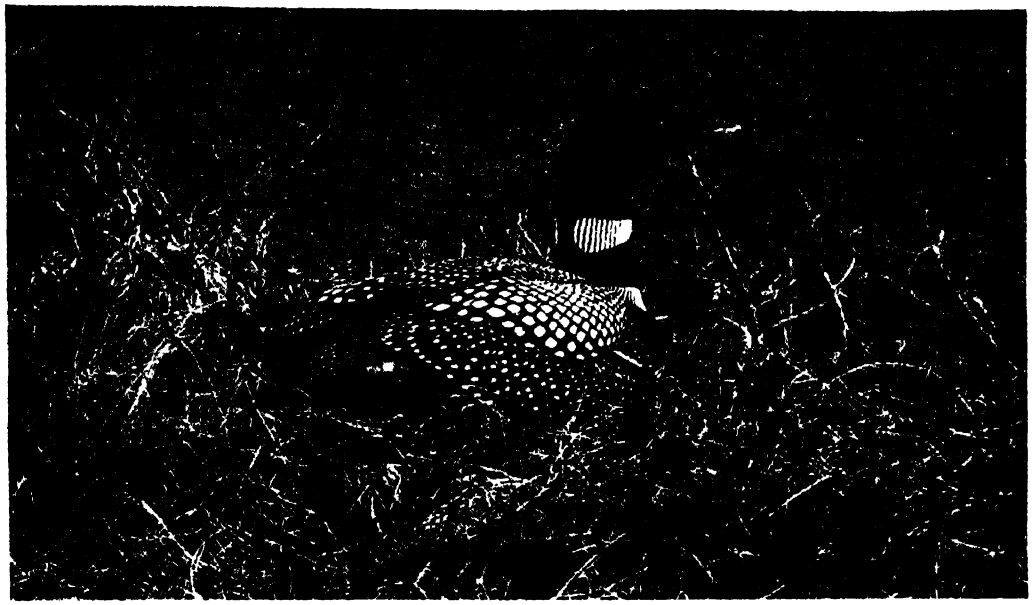
Delaware. One of the Atlantic States of the U.S.A. It has agricultural interests as well as manufactures. Its capital is Dover.
Pictorial Map: 4, 291

de Lesseps. See *Lesseps, Ferdinand de.*

Delft is a town of Southern Holland famous for its pottery, 4, 19, 32
Photo-tone Supplement: Scenes in the Low Countries, 4, *between* 112 and 113

Delhi, in the Meerut district of the United Provinces, is the capital of the

A GREAT DIVER—AND DIVING



Illustrated London News.

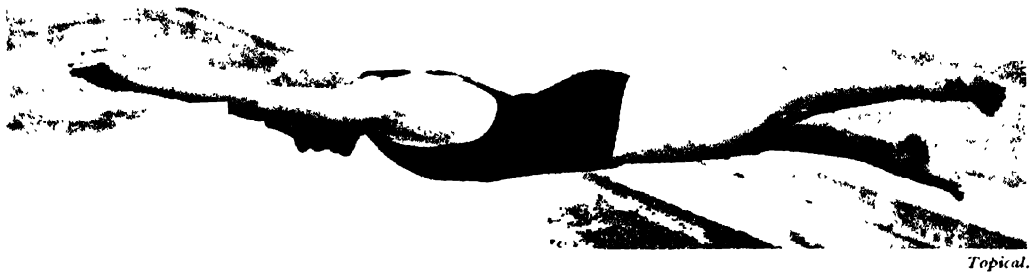
The Great Northern Diver, or Loon, the big *Diver* (see p. 109) of Iceland, is a frequent visitor to Britain's northern coasts but does not nest here. An expedition recently went to Iceland to study the bird and here is a portrait of the male, sitting on the nest, a task it shares with the hen bird. It was taken on an islet in all the glory of its chess-board pattern of black and white plumage.



Fox Photos.



H. A. Barnett Photo.



Topical.

Good *diving* (see p. 109) is one of the hall-marks of the accomplished swimmer. In the first picture is seen the backward dive, while the second shows the most graceful of all, the swallow or swan dive. The last picture is of a champion swimmer taking off with the racing dive.

Republic of India, the government buildings being actually at New Delhi about three miles from the old city. It stands on the River Jumna. See *Delhi, Today and Yesterday*, **3**, 329
—a city of the Moghul emperors, **3**, 326
—visited by the fourteenth century traveller, Ibn Batuta, **2**, 271
Pictures: The Legislative Assembly Buildings, **3**, 329
The Kashmir Gate, **3**, 334
The Palace at Delhi, **3**, 334
The Kutb Minar, **3**, 334
The Great Mosque, **3**, 336

Delhi Durbar was the name of a state ceremony arranged for the proclamation of Britain's King as Emperor of India, **2**, 232
Picture: **2**, 232

Delius, Frederick (1862–1934). A famous British musical composer, he was born at Bradford, **7**, 190
Picture: **7**, 192

Delphi. Name of a town in ancient Greece, famous for its Oracle, **2**, 2
Special Colour Supplement: In Ancient Greece, **7**, *between* 336 and 337

Delphinium. Charming perennial plant producing tall spires of blossom in various colours, **8**, 278

Delphinus is the name of a constellation or group of stars.

Delta, in geography, is the name given to the islands formed between the different streams into which a river divides just before entering the sea.
The Nile delta is famous.

Demerara is the name of a province of British Guiana where the brown or demerara sugar was first produced. It is also the name of the river at whose mouth stands Georgetown, the capital of the colony, **3**, 386

Demerara River, British Guiana. It flows into the Atlantic Ocean, and the capital, Georgetown, stands upon it. A district famous for the discovery of orchids, **1**, 364

Demeter was the Greek goddess of agriculture known to the Romans as Ceres.
Picture: **9**, 16

Democracy is a form of government under which a people governs itself, either directly or through elected representatives in a Parliament or similar body. A democracy may take the form of a kingdom in which the king's powers are limited by the Constitution (a constitutional monarchy), as in the case of our own country, or it may be a republic, as in the case of France, or the U.S.A. Systems of democratic government differ considerably from one another, but they should all conform to the principle of "government of the people, by the people, for the people," **9**, 40

De Morgan, William Frend (1839–1917). English novelist, he wrote *Alice for Short* and *Joseph Vance*.

Demosthenes (384–322 B.C.). A brilliant statesman and great Greek orator.

Demotic was a later form of ancient Egyptian writing. It was in a more rapid style than the previous forms. Some of the writing on the famous Rosetta stone was in Demotic, **9**, 6

Denarius. A coin of the ancient Romans, **8**, 291
Pictures: **8**, 293

Denbigh is the county town of Denbighshire, North Wales. It is a centre of the quarrying industry.

Denbighshire. A county of North Wales. It has much mountainous country, but is also a mining and slate-quarrying centre.

Denizen. A dweller or inhabitant; one who lives in a certain place. It is used of both human beings and animals, or one having the rights of citizenship.
Fish are denizens of the sea; birds denizens of the air; and many kinds of animals are denizens of forests.

Denmark is a country of western Europe between the North and Baltic Seas and to the north of Germany. It has many islands and is famous for its agricultural produce. The capital is Copenhagen and the population numbers more than four millions, **4**, 33 *et seq*, 354
—invaded by Germany, **2**, 248
Pictures: Denmark's Seaport Capital, **4**, 42
Ferry Boats link the Railways, **4**, 45
A Tower of Dragons' Tails, **4**, 46
The Great Bridge across the Little Belt, **4**, 47

Density means compactness; closeness. The density of iron is greater than that of water because the molecules of matter in it are closer. Thus, a cubic foot of iron weighs more than a cubic foot of water.
The density of population in England averages 700 persons per square mile.

Dent de Lion is French for lion's tooth. From it comes the name dandelion, the common plant of our waysides, **1**, 301

Dent du Midi is the name of a peak in the Swiss Alps not far from the borders of France.

Denver, business centre for mines and ranches, is the capital of the State of Colorado, U.S.A

Deodar. A variety of cedar tree native to India. It may exceed 100 ft. in height and is evergreen.

Deposit. Matter which settles in a fluid; money paid into a bank. When a muddy stream enters a lake, the solid matter in the water settles to the bottom, forming a deposit.
A deposit of lime collects on the inside of kettles.

Depot means a warehouse or storing-place; a headquarters. Near a large railway terminus will be found a goods depot and a carriage and waggon depot.
A military depot is the headquarters of a regiment.

Deptford is a Thames-side district of London famous for its docks and associations with the Royal Navy. Frobisher sailed from Deptford in 1576, **2**, 295

De Quincey, Thomas (1785–1859). An English essayist, he wrote *The Confessions of an English Opium-Eater*.

Derby. A port of the north of Western Australia mainly concerned with coastal trade and with the iron ore islands of Yampi Sound.
Pictorial Map: **3**, 242

Derby is the county town of Derbyshire. It has railway works and manufactures motor cars, besides china and textiles, **3**, 72 and 73
Picture: Derby Ware, **9**, 202

Derbyshire. An English county in the north midlands. It has much moorland, but is still a great centre for farming. Noted for the scenery of the Peak District and Derwent Valley. Chesterfield, Ilkeston and Buxton are important towns.

Dereham. A small town of Norfolk, the centre of an agricultural district.

Derg is the name given to two lakes or loughs in Eire, the first in County Donegal and the second formed in the course of the River Shannon.

Dermatitis is the medical word applied to the complaint inflammation of the skin.

Dermis is the term used to describe our true skin, which contains sweat glands, blood vessels and nerves. It comes underneath the epidermis.
Picture: **8**, 213

Derrick. A crane or framework for raising heavy weights. The derrick over an oil-well has a large pulley at the top, over which a rope runs for working drilling tools or a baler.

Derry. See *Londonderry*

Dervish. The name of a fanatical Moslem sect of north-east Africa The sect is associated with the rising of 1883 which led to the death of General Gordon, **2**, 222

Derwent. (1) A beautiful Derbyshire river flowing into the Trent, **3**, 71
(2) A river of Cumberland and the English Lake District. It joins the sea at Workington.
(3) A Yorkshire river which links up with the Ouse.
(4) A river of Tasmania, Australia. Hobart, the state capital, is built on the shores of its deep estuary, **3**, 235
Picture: **3**, 238
Photo-tone Supplement: Tasmania—Australia's Island State, **3**, *between* 240 and 241

Derwentwater is the name of one of the lakes in the English Lake District, **3**, 415
Picture: **3**, 413

Derwentwater, James, Earl of (1689–1716). He took part in the Jacobite rising of 1715 and was later executed on Tower Hill, **2**, 180

Descartes, René (1596–1650). Born at Touraine in France, he was a great thinker and the first to apply algebra to geometry, **7**, 356

Desert Artesian Basin is a considerable area in the north of Western Australia now tapped by artesian wells from some of which water gushes up from the depths at temperatures exceeding 100° F. This water has to be cooled before it can be used for agricultural and stock-breed purposes, **3**, 220

Desman. A small mole-like animal about a foot in length with webbed feet. Found in parts of the Soviet Union, the Pyrenees and in Canada.

Des Moines, on a river of the same name, is the capital of the State of Iowa, U.S.A.

Desolation Canyon is one of the deep valleys of the Colorado River, **2**, 353

De Soto, Fernando (1496–1542). A Spanish explorer. He discovered the great Mississippi river.

Dessalines, Jean Jacques (Born about 1758.) A negro slave in Haiti, he rose to be Toussaint L'Ouverture's lieutenant in the Negro rising and in 1804 was crowned emperor of Haiti. He was killed in 1806, **4**, 307

Dessau, capital of Anhalt, one of the German provinces. Here lived the great astronomer S. H. Schwabe, **8**, 122

Destroyer. A type of warship, originally known as torpedo-boat destroyer. They are usually organised in flotillas up to 20 ships and are particularly useful in defending bigger ships of all types against torpedo attack
Pictures, **8**, 15, 17, 23

Detached means separated; standing apart or away from another thing. A house is described as detached if not joined on to another house

Detect means to find out. X-rays are now used for detecting faults in materials that are not visible on the surface; and very ingenious devices for detecting outbreaks of fire as soon as they occur.
A police officer called a detective is engaged in the detection or discovery of criminals

Detmold. An industrial city of Germany, capital of the district of Lippe-Detmold

Detroit, with a population of one and a half millions, is the capital of Michigan, U.S.A. It is a vast centre of commerce, having considerable docks, and many manufactures

Dettingen, a small town of Bavaria It is interesting because of the battle of the same name (1743), the last engagement in which an English King (George II) took a personal part, **2**, 189
—Handel's Dettingen Te Deum, **2**, 189
Picture **2**, 182

Deucalion was the Greek "Noah," whose ark rested on Mount Parnassus.

Deutzia. Name of a free-flowering hardy shrub of which there are several varieties.

De Valera, Eamon. (Born 1882) A prominent Irish nationalist and politician. He fought with the Irish republicans and later became president of the Irish Free State He became Prime Minister of the Dail Eireann for 16 years until 1948, and was again elected in 1951, **2**, 412

Devaluation means to lower the value of an article The term has been much used in connection with a country's finances. The devaluation of the pound in relation to the dollar meant that the value of the pound was lowered. Whereas in 1948 £1 sterling was equal to $4, at the end of 1949 it became worth only $2.80. A British article which cost $40 in America in 1948 could be bought for $28 in October, 1949. But an article from America which cost £28 when sold in Britain in 1948 cost £40 by the end of 1949 owing to the devaluation of the £1.

Devastate means to lay waste; to ravage; to make desolate. Storms, fires and earthquakes devastate the land.

Devenish Islands, in Lough Erne, Fermanagh, has on it one of the most complete Irish Round Towers to be seen, **3**, 154

De Vere, Aubrey Thomas (1814–1902). An Irish poet, he wrote *The Waldenses* and *Inisfail*.

Devil Dances are performed by the lamas or monks of Tibet, **3**, 352

Devil Fish. Another name for *Giant Rays* (*q.v.*)

Devil-in-the-Bush is a popular name for the hardy annual plant nigella (*q.v.*).

Devil's Club. A poisonous plant growing in the coastal forests of British Columbia, **1**, 345

Devil's Coach-Horse. Name of a black beetle that invariably adopts a fighting attitude when found. It has the power of giving off an unpleasant smell.

Devil's Fingers. Old-world name for bird's foot trefoil, **1**, 307

Devil's Noose. An expressive term applied to the *Vegetable Octopus* (*q.v.*)

Devil's Peak is the name of a height at one side of Table Mountain in the Cape Province of the Union of South Africa, **3**, 281

Devil's Punch Bowl. A widely known beauty spot near Hindhead, Surrey. It is now a National Trust property, **3**, 415
Picture: **1** 336

Devil's Throat is a cataract of the wonderful Iguassu Falls in South America, **4**, 331
Picture **4**, 325

Devizes is an important agricultural town of Wiltshire Its name is said to come from the Vizes, a Norman family once owning land in the district, **3**, 37

Devon is one of our south-west counties. It includes Dartmoor and part of Exmoor and is noted for its clotted cream and cider The county town is Exeter.
There are many coastal resorts and the great port and naval station of Plymouth, **3**, 42 *et seq*
Pictures: Looking across Dartmoor from Hyne Down, **3**, 42
A Sheltered Bay in Devon, **3**, 43
Badgworthy Water in the Doone Country, **3**, 44
The Village Stocks, **3**, 47
A Devonshire Beauty-Spot, **3**, 48
Morte Point, **3**, 412

Devonian. Name given to a period when a system of rocks was laid down on the earth's crust. The Devonian formation is found in many parts of the world, **1**, 13

Devonport is a great naval station and has dockyards. It is linked with *Plymouth* (*q.v.*).

Dewar, Sir James (1842–1923). English chemist of high repute associated with the invention of cordite. He perfected the thermos or vacuum flask.

Dewberry. A species of blackberry or bramble. The fruit is good to eat, **1**, 344

Dewsbury is a town of the West Riding of Yorkshire. It is a centre for heavy woollens. **3**, 83

Dexterity means skilfulness; cleverness. The word is derived from the Latin *dexter*, meaning the right hand. Most people do things more easily with the right hand than with the left.
We use the word of mental as well as physical skill.

D.F. means Defender of the Faith.

D.F.C. means Distinguished Flying Cross.

D.F.M. means Distinguished Flying Medal.

D.H. A short name for well-known types of aeroplanes, the de Havilland (*q.v.*).

Dhar is a state of Central India. The ancient city of Dhar is its capital.

Dholpur is the name of a state and also that of its capital in the Rajputana district of India

Dhow. A kind of sailing craft much in use in countries of the Middle East and along the East Africa coast.
Picture. **3**, 369

Diabutsu. A famous statue of Buddha at the Japanese port of Hyogo, near Kobe
Picture: **4**, 251.

Diæresis. This is a mark placed over one or two vowels in a word to indicate that each is stressed in pronunciation, thus Zoë.

Diagram. A drawing made in lines to help to explain a subject. In our section on Model Making there are many diagrams which teach quickly through the eye what would need many words of written explanation.

Diagrammatic means having the nature of a diagram, making use of a diagram.

Dial. The face of a clock or similar instrument. The sundial was the earliest form of time recorder and is mentioned in II Kings xx, 11 and in Isaiah xxxviii, 8, the "sun-dial of Ahaz."
Colour Plate, **9**, *facing* 224

Dialect is the form of a language used in a part only of a country. A Yorkshireman uses English containing many words strange to southern ears and a Devonshire man might puzzle a native of Lancashire, not only by his words but by his way of pronouncing them.

Dialling is the term used for calling up a subscriber on an automatic telephone exchange, **6**, 198
Picture. **6**, 198

Diameter means a straight line passing through the centre of a circle, ending both ways in the circumference, and dividing the figure into two equal parts.

Diametral is a term used relating to the diameter of something circular. The diametral dimension of a cylinder of an engine is usually called its bore.

Diamond Jubilee. Term used to mark the sixtieth anniversary of an event. Queen Victoria celebrated her Diamond Jubilee in 1897, **2**, 222
Picture: Nearly Sixty-four Years our Queen, **2**, 221

Diamonds are carbon in pure crystal form and extremely hard. They are regarded as precious stones and are in great demand for drill points, saw teeth and other vital parts of modern machinery.
The bulk of the diamonds of commerce are mined in South Africa, but the stones are also found in Australia, Malaya and other parts, 3, 293 *et seq.*
Pictures: The Dutoitspan Mine at Kimberley, 3, 282
In a Valley of Diamonds, 3, 283
Diamond Drill, A, 6, 6

Diana Monkey. A monkey with a long white beard native to West Africa.
Photo-tone Supplement: 1, *between* 96 and 97

Diana, Temple of, at Ephesus, was one of the Seven Wonders of the Ancient World, 7, 292
Picture: 7, 287

Dianthus is the proper name for all members of the Pink family of flowers, many of them biennials.

Diaphragm. A thin plate or partition. The diaphragm of the body, made up of muscles and tendons, separates the thorax, or upper part, from the abdomen, or lower part.
The stop used in a photographic lens is an instance of a diaphragm with a central hole.

Diarist is the name given to one who keeps a diary or journal, *i.e.*, a daily account of happenings.
Our most famous diarist was Samuel Pepys (*q.v.*), who for ten years kept a diary in a cipher of his own.
—points to be observed in keeping a diary, 8, 182

Diatomite is a mineral formed from the fossil remains of tiny water plants. It is used as a filter in such processes as sugar refining, 4, 354

Diaz, Bartholomew. A famous Portuguese navigator, he was the first to round the Cape of Good Hope, 2, 286 *et seq.*; 3, 275
Picture: 2, 287

Dibber. A piece of pointed stick for planting seedling greenstuff. Often made from the broken handle of a spade or fork.

Dickens, Charles John Huffham (1812–70). Son of a clerk in the Royal Navy, he became one of the greatest of English novelists. He made his reputation with *The Pickwick Papers.* Many of his novels were written with the purpose of showing up some of the bad social conditions of the period, especially in *Oliver Twist, Nicholas Nickleby,* and *Little Dorritt,* 7, 212
—a reporter in the House of Commons, 2, 212, 221
—his popularity as a writer, 2, 411
Pictures: The Grave of Little Nell, 7, 211
Mr. Pickwick, 7, 213
From "David Copperfield," 7, 214
Oliver Twist asks for More, 7, 215

Dictaphone. A special kind of phonograph used in the dictation of business letters. It is provided with means of starting and stopping it instantly.
The words dictated are "taken down" on a wax cylinder, which is transferred to another machine for the matter to be reproduced by a typist, 6, 168
Picture: Typing from the dictaphone, 6, 170

Dictator. Term usually applied to one who is the absolute ruler of a State. There were rulers of Rome who at times of exceptional difficulty and danger assumed the title. Notable dictators in the Roman era were Sulla and Julius Cæsar.
At times in the history of the South American Republics there were persons who obtained absolute control of the State for a short period.
In recent years Mussolini became Dictator in Italy though King Victor Emmanuel III remained on the throne. Adolf Hitler in Germany seized absolute power and continued as the Fuehrer, or Dictator, till his end as Berlin fell in 1945. See *Our Parliament and Others,* 9, 6

Diderot, Denis (1713–84). A French political writer who took a leading part in the production of the Encyclopædia (See *Encyclopædists*) of which he became editor, 4, 10

Dielytra. Pretty perennial plant bearing hanging blossoms. Sometimes known as the Bleeding Heart.

Diemen, Van, Antony. See *Van Diemen, Antony.*

Dieppe. A large seaport and holiday resort on the coast of Northern France. There is a regular ferry service of steamers between Newhaven (Sussex) and Dieppe.

Diesel Engine. An internal combustion engine which derives its power from heavy oil. Named after the inventor, Rudolf Diesel (1858-1913).
—it is used for certain railway vehicles.
Picture: A Main-line Diesel-electric Engine, 5, 132
Colour Plate: A Diesel-engined Long-distance Train, 5, *facing* 180

Dieu et mon droit (for God and my right) has been the motto of English sovereigns since Henry VI.

Digestion is the preparation of food in our mouths and stomachs so that we may obtain the greatest bodily nourishment from it, 8, 219 *et seq.*
Pictures: Digestion Begins in the Mouth, 8, 221
What Happens in the Stomach, 8, 222
Digestion Completed in the Small Bowel, 8, 223

Digitalis. Name given to the biennial plant foxglove, so common in woodland clearings. From it an invaluable heart medicine is derived.

Dijon is a town of France, capital of Burgundy and a great centre for wine.

Dilwara is in Rajasthan in the Indian Union near Mount Abu and is famous for its Jain temples, 3, 343

Dinan. An ancient town and touring centre of Brittany, Northern France, some 15 miles south of St. Malo.

Dinant. A town of Belgium on the River Meuse. It is a centre for visitors to the Ardennes.
Photo-tone Supplement: Scenes in the Low Countries, 4, *between* 112 and 113

Dinard. A holiday centre seaside resort of Brittany, Northern France.

Dinas Oleu. A small property at Barmouth, North Wales, and the first ever to be purchased by the National Trust, 3, 406

Dindings is the name given to a ribbon of British territory in the Malaya Peninsula.

Dingaan. The brother of Chaka, a Zulu king, whom he killed, 3, 307

Dingle is a town of Kerry, in Eire. The name is also given to the Bay, which comes inside Dunmore Head and Bray Head.

Dingo. Name given to a race of wild dogs found in Australia. They do not bark, 1, 84; 3, 246
Photo-tone Supplement: 1, Wild Life in Australasia, *between* 336 and 337.

Dingwall. A town of Ross and Cromarty, in the north of Scotland. It stands on Cromarty Firth.

Dinoceras, an extinct prehistoric large animal having three pairs of horns, 1, 33

Dinosaur. Extinct order of reptiles of the prehistoric age, mostly of gigantic size with small brains. Their skeleton remains have been found in most parts of the world, 1, 7, 17, *et seq.*
Pictures, Triceratops, 1, 19
Tyrannosaurus, 1, 19
Uncovering remains, 1, 20, 26, 27
Brontosaurus, 1, 24–5, 36
Edmontosaurus, 1, 28, 30
Mounting a Limb, 1, 29

Diogenes (about 412 323 B.C.). The celebrated Greek philosopher who is supposed to have lived in a tub, 2, 402

Diomedes the Brave. A Tale from the Greek. One of the legends of long ago, 5, 364

Diphthong. A combination of two unlike vowel sounds as *ou* in house, *oi* in oil; or compound vowel character or ligature, as *æ* in Cæsar or *œ* in hors d'œuvres, 8, 196

Diplomat. One skilled in diplomacy, the art of conducting business between nations. We may also use the word of anyone who is tactful in the smoothing over of difficulties.

Dipper. A British bird about 7 in. in length, so named because of its habit of dipping in water to find its food. Found near rivers and streams.

Dirck Hartog Island is in Shark Bay, Western Australia, and is named after a Dutch seaman who visited this part in 1616, 3, 200

Directory, The. This was the name given to the committee of five who governed France from November, 1795, until November 1799, and to the system by which government was carried out. The five Directors became unpopular and Napoleon arrested them, substituting another system — the Consulate — which brought all effective power into his hands, 2, 410

Dirigible means capable of being steered or directed. A ship that has lost its rudder is no longer dirigible, unless it has two propellers, and then only to a limited extent.
As a noun the word signifies a dirigible balloon or airship. See *Airships.*

Disaster means a sudden and serious misfortune; a calamity. The destruction of the R.101 airship was a great disaster.

Disc. Any flat circular surface, such as the face of the sun or moon as it appears in our sight.
In botany the word is used of the central parts of some flowers, such as the daisy.
Disc Harrow. An appliance for pulverising the soil after ploughing to make it ready for seed-sowing, **6**, 383
Disciple. One who learns from a master and believes in the truth of his teaching. The word is used specially of followers of a new doctrine or theory.
Christ had many disciples besides the twelve whom He chose as His companions.
Discovery was the name of Captain Scott's famous ship built specially for battling with Antarctic ice, **2**, 368
Colour Plate: Captain Scott's Antarctic Ship *Discovery*, **2**, *facing* 305
Disinfectants are substances able to kill disease germs. They are used both to keep diseases at bay, and to destroy germs which have already got a hold.
Carbolic acid, hydrogen peroxide and permanganate of potash are some of the most effective disinfectants in common use.
Disney, Walt (b. 1901). One of the originators of animated cartoons for the cinema. His first big success came with the "Mickey Mouse" films and this led to longer films of which "Snow White and the Seven Dwarfs" was the first. See *The Art of Walt Disney*, **9**, 279 *et seq.*
Pictures: Snow White and the Seven Dwarfs, **9**, 279
A Mouse in its backgrounds, **9**, 280, 281
A Model Sheet for "Dopey," **9**, 282
Leaf from the artists' sketch book, **9**, 283
Laughter and Sadness, **9**, 285
Pinocchio with Geppetto and his Friends, **9**, 286
Pinocchio Adrift on the Ocean, **9**, 287
At the Touch of a Fairy, **9**, 285
Mickey Mouse—A Famous Star, **9**, 289
Bambi's First Stroll through the Woods, **9**, 290
Two Characters from "Song of the South," **9**, 291
Peter Goes on the Bad Wolf's Trail, **9**, 292
Pecos Bill, the Hero of the Cowboys, **9**, 293
Little Toot to the Rescue, **9**, 294
Displacement. This word, as applied to ships, means the amount of water pushed out of place by a ship floating on it. The weight of the water displaced is exactly equal to that of a ship.
Thus, a ship described as being of 10,000 tons displacement when loaded is one that pushes 10,000 tons of water out of place while in that condition.
Disraeli, Benjamin. See *Beaconsfield, Earl of.*
D'Israeli, Isaac (1766–1848). A Jewish writer, he was father of Benjamin Disraeli, Lord Beaconsfield. Wrote *Curiosities of Literature.*
Diss, Norfolk. A small town and agricultural centre standing on the River Waveney, **3**, 60
Dissenter. One who dissents or disagrees. The word is used especially of one who refuses to belong to the Church of England. Such a person is also called a Non-conformist.
At one time dissenters—of whom the Puritans were one body—were much persecuted for their opinions.
Distemper is a mixture of water, size and whitening, which may be coloured as desired by the addition of pigments. This kind of distemper is used for whitewashing or colouring walls and ceilings.
The distemper used by artists in olden days before painting in oil colours was invented in the fifteenth century was a mixture of powdered colours with water and white of egg or some other sticky substance, **7**, 8
Distil means to fall or send down in drops; to extract by boiling and condensing. The moisture in the clouds distils as rain when cold makes the vapour collect into drops.
Diver. A man employed to work below the sea for the recovery of valuables, or other salvage work including re-floating, on sunken ships. There are many other tasks, too, which have to be carried out under water and in which the services of a diver are essential. Special dress is worn enabling them to breathe while working at depths up to 150 ft., but half this depth is regarded as the limit at which the average diver can work in reasonable comfort for any length of time. (*p.h.*)
Colour Plate: The Diver Uses His Blow Pipe, **5**, *facing* 45
Diver. Name given to a family of birds. They are all mainly marine birds though they usually breed in fresh water. On land the birds are awkward and scarcely able to stand. All are powerful diving birds with strong, straight bill with which they catch the fish on which they feed.
The Black-throated Diver is found in the North of Scotland, the Great Northern Diver, the largest of the family, is a winter visitor to the islands of Northern Scotland; the Red-throated diver is another winter visitor to North Scotland, while the White-billed Northern Diver has been seen only very rarely in any part of Britain.
Pictures: Red-throated Diver, **1**, 170
Great Northern Diver, **10**, 105
Divina Commedia. Title of Dante's great epic poem, **7**, 125
Divine Right of Kings. A phrase and idea invented by James I, **2**, 155
—and Charles I, **2**, 160
Diving. The act of plunging into water as practised by the swimmer. There are various kinds of "dives" from the plain header to the ornamental "swallow dive" and other special dives include the flat racing dive which requires practice to gain the fullest advantage from it when taking part in swimming races.
Picture: **10**, 105
Diwan-i-Am. Name of the great Hall of Public Audience at the Palace of Delhi, **3**, 329
Diwan-i-Khas. The Hall of Private Audience at the Palace at Delhi, **3**, 329
Picture: **3**, 334
Djebel Mountain is a height of the Holy Land overlooking the town of Gaza.
Picture: **4**, 188
D.Litt. means Doctor of Literature.
Dnepropetrovsk. A busy manufacturing town of the Ukraine, in the Soviet Union.
Dnieper. A great river, over 1,300 miles in length, it empties into the Black Sea after flowing through the Ukraine, in the Soviet Union. Its waters are harnessed by the great Dnieper Dam and power stations, **4**, 118
Picture: **4**, 105
Dnieper Dam is one of the most famous of Russian engineering achievements. It was completed in 1932 and harnesses the waters of the Dnieper River at Zaporozhye. It was wrecked when the Germans invaded the Ukraine but has since been rebuilt, **4**, 118
Picture: **4**, 105
Dniester. Name of a river of Poland, the Ukraine (Soviet Union) and Rumania. It is about 750 miles in length and is much used for the transport of agricultural produce and timber.
The river flows into the Black Sea.
Dobrudja is the name given to a low plateau between the Danube and the Black Sea. It is used for raising sheep and goats, **4**, 102
Dock. Name applied to a number of plants, genus *Rumex*, perennial herbs found in temperate parts of the world. They have lance-shaped leaves and small, greenish flowers, **8**, 274
Docks. The accommodation provided at ports for all types of vessels. The two types are wet docks (or basins) where ships are loaded and unloaded, and dry docks (graving docks) where ships can be thoroughly examined and repaired. See *A Visit to London's Docks*, **8**, 87 *et seq.*
Docks, London's, are controlled by the Port of London Authority and include: London and St. Katharine Docks, Surrey Commercial Docks, West India, East India and Millwall Docks, Royal Docks, and Tilbury Docks. See *A Visit to London's Docks*, **8**, 87 *et seq*
Document. A writing that provides evidence or proof. A lawyer's offices contain many legal documents, such as people's wills, and deeds conveying property from one person to another.
Dodabetta is the loftiest peak of the Nilgiri Hills, Southern India. It is 8,760 ft. in height.
Dodecanese Islands are a group of the Aegean. The chief island of the group is Rhodes. Until recently the Dodecanese belonged to Italy, but they have now been ceded to Greece, **4**, 151, 158
Pictures: Where the Knights of St. John once Ruled, **4**, 158
A Calque sets sail from Rhodes, **4**, 159
Lindos, where St. Paul landed, **4**, 116
Dodgson, Charles Lutwidge. See *Carroll, Lewis.*

Dodo. A bird of the Mauritius, akin to the pigeon. It is now completely extinct because it had no means of defending itself against its enemies, **9**, 367

Doe. The female of the deer or buck; also used in the case of female rabbits, **1**, 104

Doenitz, Karl (born 1892). Grand-Admiral of the German navy. He became Führer (leader) of Nazi Germany after the death of Hitler and surrendered unconditionally to the Allies, **2**, 256

Dog. The dog was one of the first animals of which man made a friend. All about our dogs, **1**, 87. (*p.h.*)

—why do dogs turn round before resting? **1**, 88

—why does a dog wag its tail? **1**, 89

—why they are sociable, **9**, 363

Pictures: An Alsatian Family, **1**, 87
Bloodhounds, **1**, 88
Borzoi, or Russian greyhound, **1**, 88
Irish Setter; Terrier, **1**, 89
See also *Dogs as Pets.*

Dog and His Shadow, The. A Tale from Æsop and one of the classic fables, **5**, 328

Dog Bite. The first-aid remedy is to pour iodine on the wound or wash it in water containing antiseptic. A doctor should be consulted, **8**, 234

Dog-Cart. A high, two-wheeled horse-drawn vehicle. It could accommodate four passengers, those at the rear having their backs to the horse. See *Vehicles.*

Dog Daisy is a name given to the common moon daisy of the fields. It is found particularly in hayfields.

Doges Palace is one of the most impressive buildings in Venice. Doge, or Duke, was the title of the ruler of Venice in the days when that city was a powerful independent republic. *Photo-tone Supplement:* Seaports Old and New, **4**, *between* 112 and 113

Dog-Faced Monkeys. Name given to baboons, **1**, 101

Dogger Bank is an important and famous fishing ground in the North Sea, **4**, 356; **9**, 308

Doggett, Thomas (died 1721). An English actor of repute, he is best remembered as being the founder of the prize for Thames watermen known as Doggett's Coat and Badge.

Dog in the Manger, A. A Tale from Æsop, **5**, 328

Dog Licence. To keep a dog six months old and older one must take out a licence costing 7s. 6d. a year at the Post Office, **8**, 316

Dog Rose. See *Wild Rose.*

Dogs as Pets. Housing, feeding and general management. Choosing a breed; the Kennel Club registers 92 separate breeds, but naturalists record 185 species. Teaching tricks, **8**, 315 *et seq.*

Pictures: Going to a New Home, **8**, 309
A Good Pet for a Boy, **8**, 310
A Cat-and-Dog Life, **8**, 312
Both Grooming and Spring-Cleaning, **8**, 314
Bringing up the Family, **8**, 314
A Solemn-eyed Spaniel, **8**, 319
Dogs Great and Small, **10**, 111

Dog's Mercury is a wild plant having somewhat the appearance of the stinging nettle, **1**, 304

Dogs, The Hunting. See *Canes Venatica.*

Dogs, The Isle of. This is the name given to the district of the River Thames in which Millwall Docks are contained.

Dog Violet. A pretty wild flower related to violas and pansies. It is found in many parts of the world, **1**, 303

—growing wild near the Andes, **1**, 338

—in Kenya Colony, **1**, 338

Picture: **1**, 335
Colour Plate. **1**, *between* 304 and 305 (Plate 1)

Dogwood. Common shrub of the hedgerow. Bears oval-shaped leaves and produces whitish flowers which are followed by small berries. Meat-skewers are often made from dogwood.
The shrub has no connection with dogs.

Doldowlod is a village in Radnorshire, not far from Rhayader.
Picture. **3**, 104

Doldrums is the term given to a part of the ocean near the Equator where winds are light or entirely absent for long spells. In the days before steam, sailing-ships might be motionless for some weeks in these calm belts, **5**, 250; **9**, 308

Dolgarrog, in the Vale of Conway, North Wales, has a power station and aluminium works, **3**, 106

Dolgelly is the capital of the Welsh county of Merionethshire. It is interested in woollen goods and is a holiday centre, **3**, 108. (*Pron.* Dolgethly.)

Doll. A toy representing a human figure. As a plaything dolls have been known since the days of the ancient Egyptians, and later in Greece and Rome. They were popular, too, among the Aztecs in America before it was discovered by the Western World.
Dolls can be made of the simplest material and those used by the Egyptians were made of wood. Wax and china dolls were for long the best-known in Europe, but many are now made of plastics, **9**, 225, 233
Pictures: **9**, 227

Dollar. A silver coin current in Canada, the United States of America, and many South American countries. Dollars are also used in the Far East and in other parts. The coins vary in value in different countries, a dollar of the U.S.A. being worth about 5s. until September 1949 when its value increased to rather more than 7s. of our money.

Dollar is the name of a town of Clackmannanshire, Scotland.

Dolls' Hats are easily made from plaited raffia, **8**, 379

Dolls' Rugs may be made by weaving wool on canvas, **8**, 385
Picture: **8**, 385

Dolmen. A prehistoric structure, consisting of a very large flat stone resting on top of a ring of upright stones. Dolmens, which are also called cromlechs, belong to the Stone Age, and are probably the central chambers of burial mounds which in the course of time have been bared of the earth that once covered them.
Dolmens are to be found in large numbers in Brittany; and we have some good specimens in England. For example, King's Coty House, in Kent, and Wayland Smith's Cave, on the Berkshire Downs.

— there are many to be seen in Ireland, **3**, 154
Pictures. **7**, 284, 285

Dolomites. This is the name of a mountain range of the Alps which runs down from Austria into north-eastern Italy. These peaks are popular among climbing and winter sports enthusiasts
Pictures: Mountain Grandeur in the Dolomites, **4**, 152
Nature builds an Arch, **4**, 153
Photo-tone Supplement: Mountain, Plain, and Mosque, **4**, *between* 112 and 113

Dolphin. The fastest swimming of sea denizens. Not a true fish, but a member of the whale family, it may be 8 ft. long.

— there are fresh-water dolphins, **2**, 340
Picture: **1**, 211

Dom, The. This is the name of the Protestant Cathedral of Berlin in whose crypt are buried members of the Hohenzollern family.
Picture **4**, 85

Dome of the Rock, or Kubbet-es-Sakhra, is the principal building of the Temple Area of Jerusalem Within its walls is a sacred stone.
Pictures. **4**, 183 and 184

Domesday Book. A complete record of the land of England as drawn up by William the Conqueror. The original book was first kept at Winchester, then at Westminster, but is now in the Public Records Office, London, **2**, 95, 404

Domestic. Living with man, relating to the home. Horses, cattle, sheep, pigs, goats, dogs, cats and other domestic animals are all descended from animals which once lived in a wild state only.

Dominica. A British island of the Windward group in the West Indies, **4**, 389

Dominican Republic occupies two-thirds of the island of Hispaniola (*q v.*). It is chiefly an agricultural country, sugar being the main crop It has a population of over 2 millions. Ciudad Trujillo is the capital, **4**, 307 See also *Santo Domingo.*

Dominion means a territory ruled over by a sovereign or government. The British Dominions cover about one-quarter of the globe.

Dominion Monarch is a modern 27,000-ton liner which does the voyage to New Zealand in 35 days, calling at South African and Australian ports. *Picture* in *Photo-tone Supplement:* **5**, *between* 272 and 273

Domitian, Roman Emperor. He ruled from A.D. 81 until his death in A.D. 96. It was he who erected the Arch of Titus, still to be seen in Rome, as a tribute to his predecessor.
Picture: **4**, 141

Domodossola is a town of Italy at one end of the Simplon Tunnel through the Alps, **4**, 64

DOGS GREAT AND SMALL



Specially drawn for this work

Since the days of the early Britons our country has been famous for its *dogs* (see p 110) The bloodhound, greyhound, mastiff spaniel, terrier and bulldog are mentioned in a list written early in the fifteenth century The last variety was originally known as the butcher s hound, from its use by butchers for catching cattle and holding them by the nose.

Domrémy. A French village on the River Meuse where Joan of Arc was born (1412), **2**, 130
Picture: **2**, 134

Don. (1) A river of Aberdeenshire, Scotland, famous for its salmon.
(2) A river of Russia, more than 1,300 miles in length. Its source is in Lake Ivan and it flows into the Sea of Azov, **4**, 118
(3) A river of Yorkshire. It flows through Sheffield and Rotherham and enters the Ouse, **3**, 83

Donaghadee is a holiday resort and seaport of County Down, Northern Ireland.

Donatello (1386–1466). An Italian and one of the world's greatest sculptors, **7**, 310

Donaueschingen is a small German town in the Black Forest by whose Stadt-Kirche church is the Donau-Quelle, the source of the great River Danube, **4**, 87

Donau-Quelle is the source of the River Danube and this can be seen at the Stadt-Kirche in Donaueschingen, a small German town in the Black Forest, **4**, 87

Donbass is another name for the Donetz coalfield of the Ukraine in Soviet Russia, **4**, 112

Doncaster is a town of the West Riding of Yorkshire and the centre of a great farming district. It is on one of the main railway routes to Scotland, **3**, 109

Donegal. One of the northern counties of Eire now called *Tirconnail*. It has a long coastline, including Lough Swilly, and has many bogs and lakes. The capital is Lifford, on the eastern boundary of the county. Irish homespun is produced here, **3**, 154
Donegal is a town and seaport situated on Donegal Bay.

Donegal Place is a busy thoroughfare in Northern Ireland's capital, Belfast.
Picture: **3**, 146

Donetz is the name of a famous coalfield in the Ukraine Soviet Socialist republic of the Soviet Union, **4**, 112

Donga is the name given to a flat-bottomed shallow-draft boat used in Kashmir.
Picture: **3**, 350

Dongola is a district of the Sudan, to be found on both sides of the River Nile. The name is also given to two Nile towns, New and Old Dongola, the last-named in a state of ruin. The capital of the district is Merowé.

Donkey. This animal is different from the horse in the sense that it has a tufted tail, stiff mane and long ears, **1**, 93
Picture: Wild Donkey or Onager, **1**, 94

Donkey Engine. (1) A small stationary engine as found on board ship. It is used in connection with the winches, for pumping and other purposes.
(2) Name given to one of the geysers or natural hot springs of New Zealand, **3**, 260

Donkey's Band, The. A Fairy Story for the Little Folk, **5**, 317

Donne (*pron.* Dun), John (1573–1631). One of the early English poets. He became Dean of St. Paul's and his sermons show him to have been one of the great orators of his time while his poems have also earned him a high place in English literature.

Donnelly, Ignatius (1831–1901). An American author. He believed in the existence of the vanished continent of Atlantis and wrote a book to prove his theory.

Dooars. Plains covered with coarse, tall grass in northern Bengal, **3**, 348

Doolittle, Major-General. An officer of the United States Army, he led an historic air raid on Tokyo in April 1942, **5**, 219

Doon. Name of a river of Scotland, its course runs from Loch Doon to the Firth of Clyde. Its "banks and braes" figure in the writings of Robert Burns.

Doon. A loch or lake of Ayrshire, Scotland. It is about six miles in length.

Doone Valley, on Exmoor, home of the Doone family, which figures in Blackmore's romance *Lorna Doone*, **3**, 51
Picture: **3**, 44

Dorchester is the name of the county town of Dorset. It is the centre of the "Wessex" country of Thomas Hardy's works. Maiden Castle, Poundbury Camp and Maumbury Rings are well-known Roman antiquities.
Picture: Marconi beam station at Dorchester, **6**, 215
Dorchester is a village of Oxfordshire, between Henley-on-Thames and Oxford, noted for its fine abbey church.

Dorchester Hotel. Name of a famous modern building in Park Lane, London.
Pictures: Pillars of Concrete, **7**, 329
Building a London Hotel, **7**, 330

Doré, Louis Auguste Gustave (1833–83). A brilliant French illustrator and sculptor.

Doric. Belonging to Doris, a small district of ancient Greece, to the north of the Gulf of Corinth. The inhabitants, called Dorians, developed the Doric style of architecture.
Pictures: **7**, 291, 293

Dorking is a town and residential district of Surrey.
Picture: **3**, 414

Dorman-Smith, Sir Reginald (born 1899), was governor of Burma from 1941 until 1946, **4**, 215

Dormer Window is the name given to a window set in the inclined roof of a house, **9**, 408

Dormouse. A small rodent animal which hibernates during the winter; of a reddish tawny colour. It is most likely to be seen during summer evenings, **1**, 136

Dornoch is a seaside town of Sutherlandshire facing Dornoch Firth.

Doronicum. Early-flowering perennial plant with yellow, daisy-like flowers. Often known as Leopard's Bane, 2½ ft. high.

Dorsal means something relating to the back. The dorsal vertebræ are the bones of the spine between the neck and the loins. The dorsal fin of a fish is that on its back.

Dorset is mainly a farming county and is noted for its sheep. It is bounded on the south by the English Channel. The county town is Dorchester, **3**, 36 and 38
Picture: A Library in Chains, **3**, 39

Dortmund. A manufacturing and industrial town of Western Germany in the Ruhr. The city is linked with the sea by the Dortmund-Ems canal, **4**, 80

Dortmund-Ems Canal is a waterway of Germany carrying products of the Ruhr direct to the sea, **4**, 80

Dory, John. See *John Dory*.

Dotterel. Name of a European bird of the plover type, plain brown in colour, with white eyebrows, slaty brown breast, shading to black and white. It is a rather rare summer visitor, but may be found on high, moorland ground.

Dou, Gerard. Well-known Dutch painter, he was a pupil of Rembrandt, **7**, 50

Douai is a mining, industrial and engineering town of Northern France, standing on the River Scarpe. Originally a place of the Gauls, the Douai Bible was issued from here early in the seventeenth century.

Double Crochet starts like single crochet, but the wool is pulled through the loop on a different plan, **8**, 400
Picture: **8**, 401

Double Treble Crochet is worked in such a way that the wool is put over the hook twice, **8**, 400
Picture: **8**, 401

Doughty, Charles Montague (1843–1926). English prose writer and poet. Author of *Travels in Arabia Deserta*.

Douglas is the chief town and capital of the Isle of Man. It has excellent shipping facilities and here is the House of Keys, the seat of the Manx Parliament. It is a popular holiday resort, **3**, 86 and 92
Picture: **9**, 360

Douglas Dakota is a well-known type of aeroplane. It made its first public appearance in the MacRobertson Trophy Race from England to Australia, when it obtained second place with two Dutch pilots, **5**, 233

Douglas Fir. Name of a tree introduced into this country, where it is found to flourish, **1**, 326

Douglas, Thomas, Earl of Selkirk. He was granted a stretch of prairie-land in Canada by the Hudson's Bay Company in 1811 and founded there the Red River Colony. The site of the colony is close to the modern city of Winnipeg, **3**, 158

Douro is a river of the Iberian Peninsula flowing through Spain and Portugal and emptying into the sea at Oporto. It is nearly 500 miles in length, **4**, 135, 137

Douroucouli is the name of a small monkey found in South America. It sleeps by day and hunts in trees for food during the night.

Dove. A river of Derbyshire and Staffordshire. It flows into the Trent, **3**, 71
Picture: **3**, 416

Dove. Name which is given to certain members of the Pigeon family of which the stock-dove, the ring-dove or wood pigeon (*q.v.*), the rock-dove and the turtle-dove are all found in the British Isles.

Dove Cottage was the residence of William Wordsworth at Grasmere in the English Lake District.
Picture: **3**, 91

Dovedale ranks as one of the best Derbyshire dales. It is near Ashbourne and is protected by the National Trust, **3**, 415
Picture: **3**, 416

Dover. (1) A seaport and watering place of Kent, with an ancient castle. It is also a naval station, **3**, 34, 36
Pictures: **3**, 4, 5, 6
(2) The capital of the state of Delaware, United States of America.

Dovercourt. Standing at the estuary of the Stour and near Harwich, is an Essex holiday resort, **3**, 60

Dover Road, The. Known now as A2, this highway (70½ miles in length) links London with Dover. It was part of the ancient Watling Street and runs through Chatham and Canterbury, **5**, 38

Dowding, Lord (formerly Sir Hugh Dowding). He became Air Chief Marshal and had much to do with the development of the Royal Air Force, **5**, 208

Dowlais, Glamorganshire, is a centre of the South Wales coal, iron and steel industry, **3**, 94

Down is one of the counties of Northern Ireland. It contains the Mourne Mountains and is noted as a prosperous agricultural district, besides having interests in the linen industry. The county town is Downpatrick.
Picture: **3**, 147

Downcast Shaft. Name given to the shaft of a coal mine down which fresh air is drawn into the workings, **6**, 12

Downham Market is a small agricultural town of Norfolk, standing on the River Ouse.

Downing Street. A famous London thoroughfare, a turning out of Whitehall, in which is situated the residence of the Prime Minister. The only meeting between Lord Nelson and the Duke of Wellington took place here, **2**, 204; **9**, 318

Downpatrick, interested in the linen industry, is the county town of Down, Northern Ireland.

Downs. (1) Name given to ridges of chalk hills found in Hampshire, Wiltshire and other parts of Southern England. The short, crisp grass is ideal for sheep, **3**, 33 *et seq.*
Picture: **3**, 414
(2) A stretch of the English Channel between the Kent coast and Goodwin Sands. Here there is a good anchorage for ships.

Doyle, Sir Arthur Conan (1859–1930). A doctor who took to letters. His first book was *A Study in Scarlet* and his creation of Sherlock Holmes for *The Strand Magazine* made him famous, **7**, 243
Picture: **7**, 243

D'Oyly Carte, Richard (1844–1901). Theatrical manager, he staged the famous Gilbert and Sullivan operas.

D.P.H. means Diploma in Public Health.

Dr. is used for Doctor or for Debtor, *i.e.*, one who owes money and the opposite of a creditor.

Drachenfels is the name of a mountain on the banks of the Rhine. It figures in the legend of Siegfried and the well-known opera, **4**, 70
Picture: **4**, 66

Draco (about 621 B.C.). A leader of the people in ancient Athens. He drew up a most severe code of laws, **2**, 17

Dragoman is the name given to a guide in Egypt and certain eastern countries, **4**, 196

Dragoman Pass. This lies in the mountainous frontier region of western Bulgaria, actually on the frontier between that country and Yugoslavia some distance north-west of Sofia, the Bulgarian capital, **4**, 97

Dragon-Fly. (1) A prehistoric insect of immense size, 28 in. across its outspread wings, **1**, 7
(2) An insect noted for its brilliant colours. It commences its life as a water nymph. (*p.h.*).
Pictures. How the Dragon-Fly Gets Its Wings, **1**, 256, 257
Colour Plate. Dragon-Flies Hawking Above the Pool, **1**, *facing* 205

Dragon, Flying. See *Flying Dragon.*

Dragon's Blood. The gum of the dragon tree, used for making fine varnish. One of the places where it is produced is Socotra, in the Aden protectorate, **3**, 388

Dragon's Mouth is the name given to one of the geysers or natural hot springs of New Zealand, **3**, 260

Dragon's Rock is the meaning of the German word *Drachenfels* (*q.v.*).

Drake, Sir Francis (died 1596). The first Englishman to sail round the world in one voyage. One of the Elizabethan sea warriors, his name will always be associated with the defeat of the Spanish Armada (1588) His home, Buckland Abbey, in Devon, has now been acquired by the National Trust, **2**, 146 *et seq.*, 406; **3**, 413; **8**, 4. (*p.h.*)
—what he said of the Cape of Good Hope, **3**, 291
—how he captured a load of silver, **6**, 101
Pictures: The Armada is in Sight! **2**, 153
Drake on board the *Revenge*, **2**, 153
Drake and the Spaniards, **6**, 103
Colour Plate: Sir Francis Drake's *Golden Hind*, **2**, *facing* 148

Drakensberg. A long and high mountain range between Natal and the Orange Free State. The heights extend for 500 miles and are sometimes called the Himalayas of South Africa, **3**, 303 *et seq.*
Picture: **3**, 310

Drake's Drum. A Poem by Sir Henry Newbolt, **9**, 109

Dramatically means vividly; in a manner that appeals to the feelings. A drama is a play and dramatic means belonging to plays or acting.

Draper, Henry (1837–82). A well-known American astronomer. He was the first man to photograph nebulæ in the skies, **8**, 177

Draughtsman. One who makes plans or drawings showing how things are to be made or built. Draughtsmen of another kind are used to draft, or draw out and express in correct language laws, treaties and other Government documents.

Drawbridge. A bridge at the entrance to a mediæval castle. It could be raised or lowered by chains, **2**, 122
Picture: **2**, 123

Draw-Hoe. A garden implement for making furrows for seed sowing and for general hoeing, **8**, 274

Drawing is the representation of things seen or imagined in a pictorial or diagrammatic form. It is one of the natural gifts of mankind and has been cultivated from the days of prehistoric cavemen Drawing is the basis of an art which may be employed in architecture, painting or sculpture. It is one of the recognized subjects taught in practically all schools and one of the earliest efforts of childhood is to draw
See *Drawing Made Easy:* first steps in drawing with a pencil for tiny folk, **9**, 145 *et seq*
Special Colour Supplement: Fun with Colours, **9**, *between* 144 and 145

Dredger. A type of vessel employed for clearing rivers, canals, harbours, and docks of accumulated mud and silt. There are many types of dredger, such as the bucket-and-ladder, suction, dipper, etc., **8**, 81
Pictures: A Housemaid of London's River, **8**, 81
Both Dredging and Bank Building, **8**, 82
An Up-stream Thames Dredger, **8**, 83
A Gun from a Galleon, **8**, 85
The All-Clear Signal, **8**, 86

Dresden is the chief town of Saxony, in south-eastern Germany. It has many manufactures, but is noted specially for its china, **4**, 84
Picture: Dresden China Ware, **9**, 202

Driffield, Great. An agricultural town in the East Riding of Yorkshire.

Drifter is the name given to a type of fishing vessel largely used for catching herrings. It is smaller than a trawler. Originally the drifters worked with light nets and required little power, but steam is now used by nearly all fishing vessels.
Pictures: **8**, 71, 73

Drill. Name given to an agricultural implement for sowing seeds. Its coulters or steel fingers make furrows into which the seed trickles through spouts, **6**, 383

Drill. Many vegetable seeds are sown in drills, *i.e.*, shallow furrows made with a corner of a hoe with the aid of the garden line for straightness.
The opposite of drilling is broadcasting, when seed is spread thinly over the surface of the bed.

Drill. Name of an almost tailless species of baboon, found in West Africa. It has a black face.

Drinkwater, John (1882–1937). English playwright and poet. He wrote *Abraham Lincoln* and other plays around famous characters in history.

Driver Ants are found in West Africa. They wander about freely acting as scavengers and clearing all decaying matter.

Drogheda. A seaport and town of County Louth, Eire. The place has many industries.

Droitwich, Worcestershire. An ancient town that is a centre for salt. It is also a spa where sufferers from

rheumatic complaints take brine baths. It has a wireless station.

Dromedary. Term applied particularly to riding camels. They travel faster than ordinary camels, 1, 77

Dromore is one of the linen towns of County Down, Northern Ireland.

Drone. Name given to the males of the honey bee, 1, 259
Picture: 1, 264

Dronfield is a manufacturing town near Sheffield. It is a centre for cutlery and for heavy industries.

Droshky is the name given to a small four-wheeled carriage, horse-drawn, as used in parts of the Soviet Union. Droshkies ply for hire like cabs.

Drove is the name given to a straight road driven in the Fens from a village to the fields, 3, 69

Drowning. A person who has been under water some time and is apparently drowned may recover if his breathing is restored. This is brought about by artificial respiration, 8, 238
Picture: 8, 239

Droylsden. A town of Lancashire, bordering on Manchester. It is a centre of the cotton and other textile industries.

Druid. A priest, magician or soothsayer among the Celts of ancient Britain. The religious rites of the Druids were often held under an oak tree, 1, 395

Drum. The drum is technically a musical instrument of percussion, consisting of a frame over which is stretched skin or vellum, to be set in motion by direct percussion of stick or hand. In some form it has been in almost universal use from very early times. The simpler types of drum are the side-drum, the big bass drum, and the tenor drum, all having their place in the modern orchestra. In parts of West Africa drums are used for sending messages. See *Musical Instruments; Orchestra.*
Picture: 3, 380

Drum-Fire is a term used for a rapid bombardment by guns.

Drumochter Pass is a route to the Highlands of Scotland across the Grampian Hills. Its road reaches a height of 1,054 ft., 3, 124

Drupe is the name given to fruits which have hard stones, such as cherries and plums.

Dryburgh Abbey. Great place of pilgrimage in Berwickshire, Scotland. It stands on the River Tweed and is believed to date from 1150.
Among the ruins are part of the beautiful church where both Sir Walter Scott and Earl Haig are buried.

Dryden, John (1631–1700). One of the chief English poets of his century. For a time was Poet Laureate, 7, 138
Picture: 7, 138

Drypoint is the name given to a drawing or etching the fine lines of which are produced with a sharp needle, 7, 110
Picture: 7, 115

D.S.O. means Distinguished Service Order.

Dual means double or two-fold. William III and Mary were dual monarchs of England.

Dubbin is a mixture of grease and other substances, used for rubbing on leather to soften it and make it waterproof.

Dublin is a county of Eire, in the Province of Leinster. It is largely an agricultural area.
Dublin is the county town and capital city of the Republic of Ireland (Eire). It stands on Dublin Bay and the River Liffey is crossed by numerous bridges. Has shipbuilding yards, a vast export trade and many commercial interests. Famous for St. Patrick's and Christchurch Cathedrals, 3, 150
Picture: 3, 154

Du Bois-Reymond, Emil Heinrich (1818–96). An eminent professor of Berlin, he studied the problems of muscular and nervous functions and those of animal electricity.

Dubrovnik is a port of Yugoslavia on the Adriatic Sea. It was once an independent republic like Venice and was known as Ragusa. Its ships were known as Argosies because they carried so much treasure and it is from this that our modern word "Argosy," meaning "treasure ship," has come Dubrovnik has fine old walls and buildings, 4, 156

Ducat. A gold coin issued in many countries. It was first coined in silver in the twelfth century.
Pictures: 8, 304, 305

Duck. A British swimming bird, especially the domesticated form of the mallard or wild duck. (*p.h.*)
Colour Plate: Tufted Duck, 1, *between* 160 and 161 (Plate 4)
See also *Wild Duck.*

Duck-Billed Platypus. See *Platypus.*

Duck, Eider. See *Eider Duck.*

Duckling, The Ugly. A Fairy Story for the Little Folk, 5, 311

Ducks, Four. A Poem by William Allingham, 9, 114

Ducks, The Lucky. A Poem by Enid Blyton, 9, 107

Dudley, with iron works, brass foundries and engineering shops is regarded as a centre of the Black Country. It is in Worcestershire, 3, 74

Dudley, John (Earl of Warwick and Duke of Northumberland), led the opposition to the rule of Protector Somerset (1547–49) and took power on Somerset's fall. He was executed (1553) for attempting to place Lady Jane Grey upon the throne, 2, 143

Dudley, Robert (Earl of Leicester). A favourite of Queen Elizabeth.

Duel. A fight between two persons, fought with deadly weapons, to settle a quarrel. A duel has not been fought in England since the middle of the last century.

Dufferin Bridge is the name of a railway bridge over the River Ganges near Benares, 3, 356

Dufferin Fort is one of the sights of Mandalay, in Burma, 3, 222

Dugong. Name of a marine animal about 10 ft. in length like a small whale. It is found off Australia and in the Red Sea. It is sometimes known as the Sea-Cow.

Duikers. A small variety of antelope. Its body may be no larger than that of a cat, though it has long slender legs.

Duisburg. A town of the Ruhr district of Germany and an important manufacturing centre It has ironworks, chemical factories and many other industries.
Pictures. Steel Slag at Duisburg, 4, 82
The Huckingen-Huttenwerk Plant, 4, 82

Dukeries, The. This is the name given to a part of Sherwood Forest, Nottinghamshire, because of the number of titled people who have seats there.

Dulcimer. A musical instrument played with two hammers. It is said to have suggested the idea of the piano.

Dulwich. A residential suburb in the south-eastern district of London. It is famous for its college, founded by Edward Alleyn, and for its Picture Gallery

Duma was the name of the Russian parliament before the revolution of 1917, 4, 106

Dumas, Alexandre the Elder (1802–70). Originally a clerk, he took to play-writing and was at once successful. Best known, however, for his novels, especially *The Count of Monte Cristo,* 4, 16; 7, 274
Pictures: 4, 17; 7, 275

Dumas, Alexandre, the Younger (1824–95). French novelist and dramatist, son of the elder Dumas

Du Maurier, George Louis (1834–96) Son of a French father and English mother, he gained fame as an artist and as author of the novel *Trilby.*

Dumbarton, on the Firth of Clyde and in Dumbartonshire, is a shipbuilding town. It has an ancient castle perched on a rock, 3, 115

Dumbartonshire is a Scottish county on the Firth of Clyde. Much of its area is mountainous, but it has a great deal of rich farmland.
Its towns are interested in many industries, including ship-building and textiles.

Dumb Cane. A plant of the West Indies. An animal attempting to chew the leaves finds its mouth swell immediately, 1, 352

Dumfriesshire is one of the border counties of Scotland running along the shore of Solway Firth. Its interests are mainly agricultural, and it is divided into districts, Nithsdale, Annandale and Eskdale, its chief rivers being the Nith, Annan and Esk. It has links with the poet Burns.
Dumfries is the county town, occupying a position on the River Nith across which is Maxwelltown, part of the Burgh.

Dumont, Alberto Santos (1873–1932). A Brazilian, he constructed in 1898 a series of motor-driven airships, 5, 186

Dunbar is a seaport of East Lothian, in Scotland. It is closely associated with the potato industry.

Dunbar, Battle of (1650). At this battle, Cromwell routed the Scottish army, 2, 407

Dunblane. A famous touring centre of Perthshire, Scotland. It stands on the River Allan.

Duncansby Head is the point at the north-east tip of the mainland of Scotland, 3, 140

Dundalk is the principal town of the county of Louth, Eire.

Dundee stands on the Firth of Tay in the county of Angus, Scotland. It is famous as a manufacturing centre for jute, linen, jam and marmalade and is the third city in Scotland, **3**, 122

Dunedin is one of the principal cities and ports of the South Island of New Zealand. It was founded by Scotsmen who gave it the ancient name for Edinburgh.
It is a great manufacturing centre and is a university city (Otago University), **3**, 263, 270

Dunes are mounds of drifted sand which are often found on flat, exposed coasts. They are also called sandhills, **1**, 37

Dunfermline is a town of Fifeshire, Scotland, famous for its linen mills, **3**, 122

Dungannon is a town of Tyrone, Northern Ireland

Dungarvon. A town and small seaport of County Waterford, Eire.

Dungeness is a promontory on the coast of Kent near Lydd.

Dungeon is the name given to an underground prison-cell. All old castles had their dungeons, wherein enemies could be imprisoned when captured.

Dunkeld. A town of Perthshire, on the River [illegible]. It is a gateway to the Highlands of Scotland, **3**, 124

Dunkeld. Highland estate of the Dukes of Atholl where innumerable larch trees have been planted, **1**, 321

Dunkery Beacon is the highest point on Exmoor, in the West of England, 1,707 ft high. It now forms part of an estate held by the National Trust, **3**, 44
Picture. **3**, 411

Dunkirk is the third largest port of France. It is situated in the extreme north of the country, facing the English Channel, and its part in the Second World War, including the evacuation of the bulk of the British Army from the beaches, is an undying memory, **2**, 249
Picture: The Miracle of Dunkirk, **2**, 250

Dun Laoghaire is the Irish name for Kingstown, the port of Dublin, **3**, 150

Dunlin. A waterside bird belonging to the sandpiper family

Dunmow, Essex. *Great Dunmow* is a small market town standing on the River Chelmer. *Little Dunmow*, about two miles distant, is famous for the Dunmow Flitch, a piece of bacon presented to a married couple who can prove they have not repented of their marriage within a year and a day.

Dunoon is a famous holiday resort on the Firth of Clyde in the county of Argyllshire, Scotland, **3**, 139

Duns, almost in the centre of Berwickshire, is the county town.

Dunstable is a town of Bedfordshire, famous as a centre of the straw-plaiting industry. It stands where Watling Street is crossed by the Icknield Way, **3**, 18

Dunstan was one of the English Saints and Archbishop of Canterbury. He died in the year 988, **2**, 88 *et seq.*
Pictures: Dunstan is Flung into the Mud, **2**, 88
The Archbishop Unharmed, **2**, 89

Dunster. A small town of Somerset, near Minehead. It is famous for its ancient Yarn Market and for its twelfth century castle

Dunwich was in the Middle Ages an important city and port of East Anglia. It is now only a small fishing village owing to the encroachment of the sea, **3**, 60

Dupleix, Joseph François (1697–1763) An official of France in India. His ambitions were cut short by Clive, **2**, 184

Duralumin. A metal much used as an alloy with aluminium, **6**, 133; **9**, 346

Durazzo is the chief port of Albania, the little mountainous country on the eastern shore of the Adriatic Sea, **4**, 156

Durban is the largest business centre and port of Natal, the commercial capital. It has interests in many trades and is a fine city with a beautiful City Hall, **3**, 304
Picture **3**, 305

Durbar was the name of a state ceremony in India arranged for the proclamation of Britain's King as Emperor, **2**, 232
Picture **2**, 232

Durer, Albrecht (1471–1528) Son of a goldsmith in Nuremberg, he founded the German school of painting and became a great engraver, **7**, 31
Pictures **7**, 31–35

Durham is one of the northern counties of England coming between Yorkshire and Northumberland. It is interested in coal, iron, steel, shipbuilding and the heavy industries generally
Sunderland, Darlington, Gateshead, Stockton and the Hartlepools are among its chief towns, **3**, 80

Durham. The capital of the county of the same name. It is noted for its ancient cathedral and has a university, founded in 1832. It stands on the River Wear and has many industries, **3**, 81
Pictures Durham Cathedral, **7**, 116
In the Crypt at Durham, **7**, 297
The Altar at Durham, **7**, 304

Durham, John George Lambton, Earl of (1792–1840). He was appointed Governor-General of Canada in 1838 and is noted for his famous report which foreshadowed the Canadian constitution, **3**, 158

D'Urville, Dumont (1790–1842). Famous French explorer. The D'Urville Sea, in the Antarctic, is named after him, **2**, 366

Dusseldorf is a manufacturing town of Germany on the Rhine

Dust is composed of fine dry particles of matter and without its presence in the atmosphere there would be no clouds as dust acts as condensing centres for the formation of raindrops, **9**, 378

Dutch Auction. An auction sale where the price of an article is lowered at each bid instead of being raised, as is normally the case, **9**, 358

Dutch Borneo represents a considerable part of the large island of Borneo, in the Malay Archipelago.

Dutch East India Company. A powerful company of merchant adventurers founded in 1602 and the means by which the Dutch acquired and ruled the Netherlands Indies (Dutch East Indies (*q.v.*)) and ruled them for nearly two hundred years. The company was dissolved in 1798. Henry Hudson's tragic voyage (1609) was made for the company, **2**, 297
—and the discovery of Australia, **3**, 200

Dutch East Indies, or Netherlands Indies, consist of five major islands (Java, Sumatra, Borneo, Celebes, and a considerable part of New Guinea) and many smaller ones. As a result of the Second World War, Indonesian nationalism took a hold on the islands of Java, Madusa and Sumatra, and in 1945 the Indonesian Republic was proclaimed. Provision has been made to form a Netherlands Indonesian Union under the Dutch Crown. See *Indonesia*. During the war the Dutch East Indies were occupied by the Japanese, **2**, 252

Dutch Guiana. See *Guiana, Dutch*

Dutch Hoe. A garden tool used with quick pushing movements to aerate the soil surface and destroy seedling weeds, **8**, 274, 277

Dutoitspan is the name of one of the modern diamond mines at Kimberley, Cape Province, South Africa
Picture. **3**, 282

Duyfkhen, meaning Little Dove, was the name of a Dutch ship which visited Australia in the early seventeenth century, **3**, 200

D.V. means *Deo volente*, i.e. God willing.

Dvina. Name of two rivers of the Soviet Union. The Northern Dvina, about 360 miles of which are navigable, empties into the White Sea. The Western Dvina, much used for transporting timber, flows into the Gulf of Riga

Dvorak, Antonin (1841–1904) A Bohemian, he became a great musical composer, **7**, 185
Picture: **7**, 186

dwt. means pennyweight

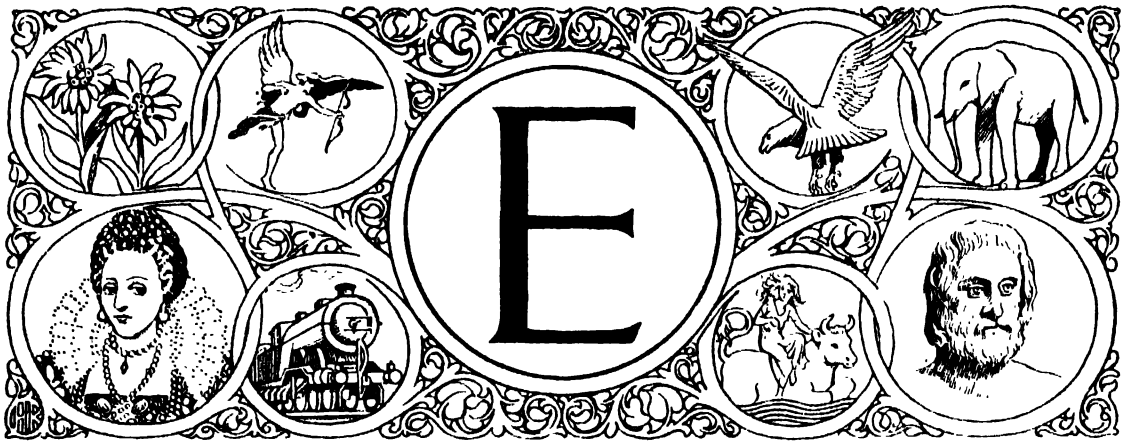
Dyaks are a people of Borneo. Some are sea Dyaks, formerly fierce pirates, whilst others belong to inland tribes and are descended from head-hunters, **2**, 326; **3**, 404
Picture **2**, 328

Dynamite is a very powerful explosive made by mixing nitro-glycerine with a kind of earth called kieselguhr. It is three times more powerful than gunpowder. It was invented by Alfred Nobel (*q.v.*).

Dynamo. A machine which generates electric current when a revolving part of it, wound with many turns of wire, is rotated between powerful electro-magnets, **6**, 148. (*p.h.*)
Picture: **6**, 147

Dysart is a town and port of Fifeshire. It is on the Firth of Forth.

Dzhulfa is the name of a town on the railway from Iran to the Soviet towns of Tiflis and Baku, **4**, 203



Eagle. Numbered among the most noble of birds, it frequents mountainous areas and usually lives in pairs. The bird hops whilst on the ground and has marvellous powers of flight. It ranks as a bird of prey. The Golden Eagle, the "King of Birds" is still found in parts of the Scottish Highlands and in the forests of Russia and Sweden, **1**, 190. (*p.h.*)
Pictures: **1**, 188, 189
Colour Plate: The Golden Eagle at Home, **1**, *facing* 197

Eagle, Monkey-Eating. See *Bateleur.*

Ealing is one of the inner western suburbs of Greater London.

E. & O. E. means Errors and Omissions Excepted. Often seen on invoices and accounts.

Eared Pheasant. See *Manchurian Eared-Pheasant.*

Earl Haldan's Daughter. A Poem by Charles Kingsley, **9**, 110

Earl's Seat is the name given to a high point of vantage on the Campsie Fells, **3**, 115

Earn. A loch in Perthshire and a river that emerges from the loch.

Ears. In the course of first aid, when a person has got a bead or some other foreign matter in the ear, consult a doctor at once. Unless the object is protruding so that it can be grasped, do not touch it, **8**, 240

Ear-Shell. Name of one of the molluscs, its shell is pierced so that water flows through freely. Found in most parts of the world.
It is sometimes called the Ormer.

Earth, The. The world on which we live is one of the smaller of the nine planets which with their satellites revolve round the sun, forming the solar system. The "round earth" was at one time thought to be flat and to be the centre of the universe. Modern knowledge tells us that it is round, and also that it is but an infinitesimal part of the universe as now conceived. The earth is thought to have been formed by having been ejected from the Sun, and its age has been estimated at 3,000 million years. The precise shape of the earth is that of an "oblate spheroid," such as might be expected in the case of a rotating body which has cooled down from a molten state. The diameter of the earth is nearly 8,000 miles long and its circumference nearly 25,000 miles. It is 93 million miles from the sun, but only 239,000 miles from the moon. The facts that it turns on its axis once a day and moves round the sun once in 365¼ days are commonplaces. It is not, however, so well-known that the earth, along with the solar system to which it belongs, travels through space at the rate of 150 million miles a year. Apart from our knowledge of the earth in its relation to the world outside it, long and careful investigation of its strata and rock formations have increased our store of knowledge of the earth itself. See *The Story of the World*, **1**, 1 *et seq.*, and *Wonders of the Heavens*, **8**, 107 *et seq.*
Pictures: Earth's Story told by Strata and Rocks, **1**, 4 and 5
The Planets and the Sun, **8**, 107
The Solar System, **8**, 108
A Long Railway Journey, **8**, 116
Our Neighbours, **8**, 141
The Earth as seen from Venus, **8**, 146
Comparative Sizes of the Earth and Mars, **8**, 147
Colour Plate: The Earth as a Planet among other Planets, **8**, *facing* 160

Earth. Name used for the underground burrow or home of a fox, **1**, 84

Earthquakes are due to the breaking of rocks inside the earth's crust and to slips at places where large masses of rock are in a state of great strain, **9**, 317

Earth's Sister Planet is an expression applied to Venus, **8**, 140

Earth's Spin in the latitude of Britain is about 9 miles a minute; at the Equator it is 17 miles a minute.

Earth Star. Name given to a rare fungus sometimes called Jack-in-the-Box.
Picture: **1**, 362

Earth-Worms. Sometimes called Nature's ploughmen, they tunnel in the earth and carry below leaves and other debris, bringing good soil to the surface.
In an acre of garden ground there are 50,000 worms.

Earwig. An insect which does not pass through the egg and chrysalis stage. It has wings folded like a fan, **1**, 255
—why is an earwig so called? **1**, 255
Picture: **1**, 258

East Africa, British. See *British East Africa.*

East African Groundnuts Scheme is the name given to the pioneer scheme now in hand for growing large quantities of groundnuts in East Africa, **3**, 372

East Africa, Portuguese. See *Mozambique.*

East Anglia embraces Norfolk, Suffolk and Essex, **3**, 59 *et seq.*

East Anglian Heights is the name given to the chalklands which come to the sea in the steep cliffs of Hunstanton Point, **3**, 59

East Bergholt is in Suffolk and is the birthplace of the great English painter, John Constable, **3**, 62

Eastbourne. Popular seaside resort in Sussex. Beachy Head comes to the west of the town, **3**, 36

Easter means "feast of Spring," **9**, 301

Easter Island is in the South Pacific, some 2,000 miles west of Chile to which republic it belongs. Upon the island are curiously carved rocks, statues and other remains, **2**, 314

Eastern Pacific, French Settlements in. These include a considerable number of small island groups scattered over a wide area. The most important of the settlements is the island of Tahiti.

E is the fifth letter of our alphabet, the second of the five vowels, and the most frequently used letter. It has five different sounds in the words "me," "get," "England," "her," and "prey"; and when placed at the end of a single-syllable word, such as "bate," "bite," "note," or "mute," lengthens the sound of the preceding vowel, though not sounded itself.
On compasses E stands for East, as it does also in the abbreviation E.C., meaning East-Central postal district of London. In music, E is the third note in the scale of C major.

East India Company was the name of a trading corporation, granted a charter by Queen Elizabeth on December 31, 1600, to trade in the East Indies. They established factories or trading-stations in India and eventually became the real rulers of a large part of India. Parliament in England took certain responsibilities and began to share control but after Mutiny of 1857 the government of India was taken over by the Crown and the East India Company was abolished in 1858, **2**, 184, 193, 218, 407; **3**, 311; **4**, 343; **8**, 28
—first fleet sailed from Woolwich in 1601, **8**, 89
Pictures: The East India Company at Surat, **4**, 340

East Indiamen was the name given to the towering sailing ships that voyaged between this country and India before the days of steam, **3**, 345; **8**, 89
Pictures : An East Indiaman of 1700, **8**, 30
Photo-tone Supplement : Ships To-day and Yesterday, **5**, *between* 272 and 273

East Indies. This name refers usually to the Malay Archipelago, but may include Sumatra, Borneo, Java and other islands in these waters.
The climate is entirely tropical and some of the islands have volcanoes. Coffee, spices, rubber and tobacco are among the crops grown. The Dutch East Indies may be included in this group.

Eastleigh, Hampshire, has vast engineering and carriage building works belonging to British Railways.

East London is a port of the Cape Province, Union of South Africa, on the south-east coast, 293

East Lothian is a county of Scotland between Berwickshire and the Firth of Forth. It is an important sheep-raising and farming district, containing the Lammermuir Hills.
The county town is Haddington. At one time East Lothian was known as Haddingtonshire.

East Malling, Kent. A research station for agriculture is situated here, **1**, 392
Pictures: A Vernalisation Task, **1**, 387
In the Orchard, **1**, 388

East Riding of Yorkshire is mainly agricultural in its interests, **3**, 82

Eau-de-Cologne is a perfume invented by Johann Maria Farina, who settled in Cologne in 1709. It is made of the oils of bergamot, citron, neroli, orange and rosemary and other ingredients, **9**, 239

Eaves. The projecting lower edges of the slopes of a roof. Slated and tiled roofs have gutters fixed below the eaves to catch the rainwater flowing down the slopes and carry it away clear of the house.
This word is probably connected with "over" since eaves overhang the walls.

Ebb is the name given to a falling tide, **5**, 27

Ebbw Vale is a Monmouthshire town and a centre of the coal, iron and steel industry, **3**, 94

Ebonite. A hard variety of vulcanised rubber. It differs from ordinary elastic rubber in containing a much larger proportion of sulphur, which may be half of the total material used.
Ebonite takes a high polish, and can be easily moulded and cut. Being a very good insulator, it is used a great deal in the manufacture of electrical apparatus, **6**, 141
Picture: **6**, 141

Ebony. Name of a race of trees that grow in tropical forests. From the heartwood is cut the ebony used as timber, **1**, 322

Ebor. Means Eboracensis, *i.e.*, of York.

Eboracum was the Roman name for the city of York, **3**, 84

Eccentric means out of centre. The path of the earth through space round the sun is eccentric in the sense of not being circular. Two circles which cut one another are each eccentric to the other.
A person is said to be eccentric if he behaves in an odd manner.

Ecclefechan is a small town of Dumfriesshire, Scotland. It was the birthplace of Thomas Carlyle, the historian and essayist

Ecclesiastical. Relating to the Church or clergy. There are ecclesiastical laws, courts, buildings, histories, clothes, and so on. Originally the Greek word *ekklesia*, from which it is derived, meant a meeting of citizens.

Echidna. Name of an ant-eater type of animal found in Australia. It catches ants by means of its sticky tongue and lays eggs.

Echo and Narcissus. A Tale from the Greek one of the world's great myths and legends, **5**, 354

Echoes are the reflections of sound from a distant surface. An echo may be used to measure distance and many ships carry echo-sounding apparatus, **5**, 114
Picture: Measuring distance by echo, **5**, 114

Echternach is a small town on the River Sure in the Duchy of Luxemburg. Here is the tomb of St. Willibrod, an English missionary who founded an abbey at Echternach (A.D. 701).
Picture, **4**, 171

Eclair. Name given to a form of pastry filled with cream or custard.

Eclipse. A shutting-off of the light of the sun by the moon passing between the sun and the earth, a darkening of the moon by the earth's shadow.
A feat is said to be eclipsed if "thrown in the shade" by a much greater feat of the same kind.

Eclipse, Annular. See *Annular Eclipse.*

Eclipses of the Moon seldom take place more than twice a year, though there will be three in 1985. These eclipses are caused by the moon passing through the earth's shadow which stretches into space some 859,000 miles. The moon may be totally eclipsed one hour and forty minutes. In the case of a partial eclipse, the moon does not enter the *umbra*, or central part of the earth's shadow, and this is called a *penumbral* eclipse. At the other times the moon partly enters the *umbra*, **8**, 128
Pictures: Baily's beads and the Mountains on the Moon, **8**, 129

Eclipses of the Sun take place when the moon comes between the earth and the sun. There are at least two eclipses of the sun every year. The total eclipse of the sun can only be seen from certain places on the earth's surface and in others it is seen as a partial eclipse. Eclipses have been observed from very early times. One of the earliest recorded (in a Chinese book, "Chou-King") probably took place about 2000 B.C. They have in the past often been looked upon as portents of disaster, **8**, 124, *et seq.*
Pictures: Photographing an Eclipse, **8**, 124
Progress of a Solar Eclipse, **8**, 125
Three Forms of Solar Eclipses, **8**, 126
A Solar Eclipse : Cause and Effect, **8**, 127
Why a Solar Eclipse does not Occur Every Month, **8**, 128
A Total Eclipse of the Sun, **8**, 130
Fantastic Fire Clouds, **8**, 132

Ecliptic is the name given to the great circle round which the sun appears to travel in the course of twelve months.

Economic Co-operation Act (1948) was an American Measure designed to provide further American help for the war-stricken countries of Europe, **2**, 260, 415

Ecuador is a republic of South America and is named after the Equator which runs through the republic. There are many volcanic peaks in the country which is of agricultural importance. It is the chief world supplier of balsa and mines gold, copper, and other metals. Quito is the capital, **4**, 330, 394
Pictures: A Remote Home, **4**, 332
A Sunday Market, **4**, 332
On the River Guayas, **4**, 335

Edam is a town in Holland noted for its cheeses, **4**, 31

Eddington, Sir Arthur S., O.M. (1882–1944). A famous British astronomer. He helped to explain many of Einstein's theories, **7**, 378

Eddystone Lighthouse is situated to the south-west of Plymouth. The light has a range of about eighteen miles. Three previous lighthouses have stood here, **3**, 46
Picture: **8**, 105

Edelweiss is a rock-plant with silvery foliage and flowers of white or cream. It is a native of the Alps. (*p.n.*)

Eden, Anthony (born 1897), served in the First World War, 1914–18, and was elected M.P. in 1923. After holding other offices he became Foreign Secretary in 1935, but resigned later. In the Coalition Government he was again Foreign Secretary 1940-45, resigning when the Labour Government took office. Became Foreign Secretary again in 1951.

Eden, Garden of. See *Garden of Eden.*

Eden Valley, in the English Lake District, is the vale along which flows the River Eden, to enter Solway Firth, **3**, 90

Edgar the Atheling. The boy heir to Edward the Confessor who was passed over in favour of Harold,

Earl Godwin's son (1066). "Atheling" means prince, **2**, 93

Edgar the Peaceful (944–75). An English King. He was rowed on the Dee at Chester by six other kings, **2**, 89

Edge Hill. Name of a strip of high ground in Warwickshire. Here was fought the Battle of Edge Hill in 1642, **3**, 71

Edict. An order issued by a king or ruler to his subjects as a rule or law which must be obeyed; a proclamation; a decree.

Edict of Nantes (1598) gave freedom of worship to the Huguenots (Protestants), although Catholicism remained the State religion of France. Its revocation (1685) weakened France and caused many Huguenots to emigrate, **2**, 408

—some Huguenots went to South Africa, **3**, 408

Picture: **3**, 281

Edie. A rich goldfield in the Territory of New Guinea, developed largely as a result of Australian enterprise, **3**, 244, 390

Edinburgh, the capital of Scotland, stands on the Firth of Forth and has a population of nearly 500,000. It is a city of great beauty and is most historical. In its castle is the Scottish National Memorial to the Fallen of the war of 1914–18.

The city has many industries, including printing, and it is a great centre for education, its University being founded in 1582, **3**, 115, *et seq.*

—Edward VII at Edinburgh, **2**, 223

Pictures: Princes Street, Edinburgh, **3**, 117

Holyrood Palace, Edinburgh, **3**, 116

Our Soldiers' Humble Allies, **3**, 118

For Scotland's Fallen, **3**, 119

Colour Plate: Edinburgh Castle, **3**, *facing* 93

Edinburgh, H.R.H. the Duke of, is the son of Prince Andrew of Greece and Princess Alice of Battenburg. He was born on the island of Corfu on 10th June, 1921. On 20th Nov., 1947, he married Princess Elizabeth, receiving his dukedom prior to the marriage (previously he had been known as Lieut. Philip Mountbatten). He has one son, Prince Charles of Edinburgh, born in Nov., 1948 and a daughter, Princess Anne, born August, 1950, **2**, 259, 265, 415

Pictures, The Royal Wedding, **2**, 262

Edirne. See *Adrianople.*

Edison, Thomas Alva (1847–1931). Born at Milan, Ohio, he discovered that a wire will carry at the same time two currents of different intensity and so came to invent the telegraph. Improved Bell's telephone and produced a microphone, the kinetoscope, phonograph, incandescent lamps and hundreds of ingenious inventions, **6**, 167

Picture: The first machine to reproduce talk. **6**, 167

See also *Gramophone*

Editor. One in charge of the production of a newspaper, magazine or other publication. His (or her) chief duties are to decide and make arrangements for the matter to be used, and to see that everything is correct. (See also ***Newspapers.***)

Edmonton. (1) A town of Middlesex and suburb of Greater London. (2) The capital of Alberta, Canada. Its industries include engineering, meat-packing and flour-milling, **3**, 180

—it is the southern terminus of the Alcan Highway, **3**, 196 *et seq.*

Edmund I (922–46). A King of the English. Grandson of Alfred the Great, he was known as the Magnificent, **2**, 88

Edmund II, known as Ironside, was a Saxon King of the English who ruled with Canute the Dane. He died 1016.

Edred was the name of a Saxon King of England. He died 955.

Education. In its broadest sense education covers all the knowledge we gain from books, travel, social contacts and from all our experiences in life. In the sense in which it is usually used the word is confined to the teaching and bringing up of children. In Greece and Rome there were schools for teaching the young In England there were schools attached to the monasteries from the tenth century and later grammar schools, attended by noblemen's sons as well as those of ordinary freemen. But until the reign of Queen Victoria education was not considered a matter for the government. Then in 1832 State grants were made to elementary schools and this was followed by a system of inspection and the seeds of the present Ministry of Education were sown, **2**, 211, 216 *et seq.*

– Elementary Education Act (1870) made education compulsory, **2**, 412

Education Acts. The eighteenth century saw a rapid increase in the population of Great Britain without a corresponding increase in schools, and at the beginning of the nineteenth century a very large proportion of the nation's children were receiving no education, or were attending schools hardly worthy of the name. The Church of England and other religious bodies worked hard to provide more schools, and from 1832 onwards they were assisted by grants of money from the Government. It was, however, not until the great Education Act of 1870 that the foundations of a national system of education were laid.

The Elementary Education Act of 1870 was intended to "complete the voluntary system and fill the gaps" Under it School Boards were established and given the duty of providing new elementary schools at the public expense, and the existing voluntary schools received increased grants.

A few years later the Elementary Education Act of 1876 introduced compulsory attendance. The Local Government Act of 1888 brought the then new county councils into the field of higher education, giving them the power to aid "technical" instruction. The improved grant system made it possible after 1891 to abolish fees at many public elementary schools. The Education Act of 1892 ended the life of the School Boards and made the county councils and county boroughs the local authorities for both elementary and higher education. Under the same Act the local authorities were required to maintain at public expense the voluntary elementary schools provided and managed by the Church and other bodies.

The Education Act of 1921 raised the compulsory limit of age to 14, abolished part-time attendance and extended medical inspection. This Act was eventually superseded by the Act of 1944, which, among other provisions, laid it down that every child shall receive both elementary and secondary education, raising the school-leaving age to 15, with powers to raise it later to 16. It also set up a system of part-time education in county colleges and abolished fees at all schools maintained by the local education authorities and at the county colleges.

See *School; University.*

Edward. A large lake of Central Africa. It is one of the sources of the River Nile.

Edward, known as the Martyr, was a Saxon King of the English. He died 979.

Edward the Elder, became King of Wessex after the death of Alfred the Great in 901. During his reign the kingdom expanded. He died in 925, **2**, 404

Edward I (1239–1307) King of England and one of our best rulers. In 1295 he called the Model Parliament, which became the basis of our present parliamentary system, **2**, 110, 404

Pictures. The First Prince of Wales, **2**, 112

The Last March of Edward I, **2**, 113

Colour Plate Historic Harlech Castle, **3**, *facing* 92

Edward II (1284–1327). King of England. He was born at Carnarvon and became the first Prince of Wales. He was murdered in Berkeley Castle, Gloucestershire, **2**, 112

—Fights Robert the Bruce, **2**, 115, 404

Picture: **2**, 110

Edward III (1312–77). King of England, he was regarded as the greatest warrior of his time in Europe.

—Marches against the Scots, **2**, 115, 404

—Defeats the French, **2**, 125

Edward IV (1442–83). King of England. In his reign books were first printed by Caxton in the Almonry of Westminster Abbey.

Picture: **2**, 135

Edward V (1470–83). The boy king who never ruled. He came to the throne when the Duke of Gloucester was his guardian. He and his brother were imprisoned in the Tower of London and there, so the accounts tell us, murdered, **2**, 135

Edward VI (1537–53). Son of Henry VIII, he succeeded to the Throne of England when only ten. In his reign a Prayer Book was compiled and brought into general use, **2**, 142, 406

Picture: **2**, 143

Edward VII (1841–1910). King of Great Britain and the Empire Beyond the Seas, Emperor of India,

he is known in history as "Edward the Peacemaker." Son of Queen Victoria and her Consort Albert, he came to the Throne in 1901, 2, 223 *et seq.*, 412
Pictures: Sandringham House, Norfolk, 2, 223
A Royal Marriage Ceremony, 2, 224
The Princess from over the Sea, 2, 225
Watching the Games at Braemar, 2, 226
King Edward VII as Field-Marshal, 2, 227
The Famous Dog Cæsar, 2, 228

Edward VIII (born 1894), King of Great Britain and the Empire Beyond the Seas, Emperor of India. Ascended the Throne in 1936 on the death of his father George V, but before many months renounced his Kingship. Is now H.R.H. the Duke of Windsor, 2, 243, 412
Picture: Watching the Games at Braemar, 2, 226

Edward the Black Prince (1330–76) Eldest son of Edward III, he married the Fair Maid of Kent.
Picture. Tomb of the Black Prince, 7, 305

Edward the Confessor (1005–66). King of the English. It was at his wish that the earlier Westminster Abbey was built, 2, 93, 404

Edwin. A king of Northumbria who ruled the region from A.D. 617 until A.D. 633 when he was slain at the Battle of Hatfield. He gave his name to the famous rock on which Edinburgh Castle stands
Colour Plate. Edinburgh Castle, 3, *facing* 93

Edwy was a Saxon King of England. He died 958.

Eel. A fish with elongated snake-like body and no visible scales. Eels are found in both sea and fresh water in most parts of the world except the polar regions
The young eels, known as elvers (*q.v.*), arrive in fresh water from the sea where they were born. Usually they live in fresh water for about five or six years though some may remain much longer and grow to a very large size. Most of the eels, however, return to the sea where they spawn and, so far as can be traced, the old eels never come back to the rivers again

Eel, Conger. See *Conger Eel.*

Eel, Electric. See *Electric Eel.*

Effigy. The image or likeness of a person or thing, in sculpture or painting. The word is often used in describing figures on monuments or tombs.

Effingham, Lord Howard of (1536–1624). As Lord High Admiral he commanded the English fleet against the Spanish Armada, 2, 150

Eft. Name given to the *Smooth Newt* (*q.v.*).

Egalité, Philippe, Duke of Orleans (1747–93). French nobleman, known as Philippe Egalité on account of his views. He voted for the execution of Louis, but was later put on trial himself and sent to the guillotine.
Picture: 4, 17

Egbert. The first King of the English. He died 839, 2, 83, 404

Eggar Moth. Large heavy reddish-brown moth, well known in this country. The wing expanse varies from 1 to 3 in. and they possess a highly-developed hind wing.

Egg-Cases, Curious. About the shells of the eggs of certain fish, 1, 228

Egg Cosies are easily made by means of frame weaving, 8, 385

Egg-Raft. Name given to the boat-shaped receptacle for the eggs of gnats.
Picture: 1, 272

Eggs, The Colouring of. How birds camouflage their eggs, 1, 170

Egg-Tooth is a provision of nature given to certain baby snakes to enable them to break the shell at hatching-time, 1, 148

Egham. A town of Surrey, on the River Thames. Near by is the Royal Holloway College.

Egremont. (1) A town of Cumberland, interested chiefly in iron-ore. (2) A town of Cheshire where many Liverpool workers have their homes.

Egret. A bird belonging to the heron family. During the nesting season it displays plumes known as ospreys. Found in southern Europe and in parts of Asia and Africa. The fully-grown birds are pure white in colour. American Egret. See *Great American Egret*

Egypt. A kingdom of north-eastern Africa and the home in ancient times of one of the early civilisations. It is divided into the two great districts of Upper and Lower Egypt. Its agriculture depends upon the River Nile and irrigation. Grain, rice, sugar, and cotton are the chief crops. Cairo is the capital and the population is about 19 millions, 4, 191 *et seq.*
—Alexander the Great conquers ancient Egypt, 2, 43
Napoleon Bonaparte in Egypt, 2, 197, 198
—the civilisation of Ancient Egypt, 2, 401
—Egypt's trade with Britain, 4, 378
—It was in Egypt that Western civilisation had its beginnings before 4,000 B.C. Records of their wonderful progress in the arts and crafts have been found in tombs and other buildings, 9, 5 *et seq.*
—Irrigation schemes in Egypt. See *Irrigation.*
Pictures: The Pyramids of Gizeh, 2, 402
The Builders of Egypt, 2, 403
A Gateway to the Suez Canal, 4, 191
In the Land of the Pharaohs, 4, 192
In the Great Temple at Luxor, 4, 193
Two Mosques of Cairo, 4, 194
The Pyramids of Gizeh, 4, 195
Old Houses near Cairo's Zoueila Gate, 4, 196
The "Gulli-Gulli" Man, 4, 197
The Sphinx at Gizeh, 4, 198
Egypt's Cotton Industry, 4, 366
Colour Plate. Coaling at Port Said, 4, *facing* 196

Ehrenbreitstein is a German fortress town opposite Coblenz on the Middle Rhine, 4, 70

Elder Duck. Found on rocky coasts of Iceland, the Faroe Islands, etc. Plucks down from its breast for nest-making.
Picture: 1, 172

Eiffel, Gustave. A famous French engineer. He built the Eiffel Tower in Paris, 1887–89.

Eiffel Tower. Name of one of the landmarks of Paris, 984 ft. in height. It was erected for the Exhibition of 1889. To-day the tower is an important radio and meteorological centre.

Eiger is the name of a Swiss mountain in the Bernese Oberland. It rises to a height of over 13,000 ft., 4, 62

Eindhoven. A town of Holland with important radio and electric light bulb factories, 4, 31

Eingyi is a short jacket worn by Burmese, 4, 220

Einstein, Professor Albert (born 1879). A German scientist, he has made many most valuable discoveries in the science of relativity, 7, 378

Eire is now the independent Republic of Ireland. It consists of the southern counties of Ireland, its capital being Dublin, 3, 141, 148 *et seq.*

Eisenach. A town of Germany at the north-western end of the Thuringian Forest associated with Martin Luther, the great religious reformer, who lived and worked in its castle, the Wartburg.
Pictures: 4, 75, 76

Eisenhower, Dwight David (born 1890). Famous American General who became Commander-in-Chief of Allied Forces in North Africa in 1942 and Supreme Commander of Allied Armies of Liberation in Europe in 1944. Received Order of Merit and made Freeman of the City of London June 1945. He relinquished his Army command to become a candidate for the Presidency, and was elected in 1952, assuming office Jan., 1953.

Eisteddfod is the name given to a Welsh national festival of music, song and verse. 3, 100 (*pron.* Istethvod).
Pictures. Scenes at a National Eisteddfod, 3, 99

Ejido is the name given in Mexico to the system of breaking up the large estates and giving the land to small village communities, 4, 298

Ekka. A hooded cart used for transport in India and Ceylon.
Picture: 3, 356

El Abanico is a centre producing hydro-electric power for the Huachipato steel works in Chile. Construction of the hydro-electric plant is not yet complete, 4, 324

El Alamein, Battle of (2nd November, 1942) A great victory of the Eighth Army in the Western Desert of North Africa in which over 9,000 prisoners were taken. It was a decisive success for Generals Alexander and Montgomery, 2, 252

Elan is the name of a river of Wales. In its valleys near Rhayader lake reservoirs have been formed to provide water for the city of Birmingham, 3, 102; 5, 251
Pictures; Elan Valley, 5, 251
Claerwen Dam, 5, 252

Eland. An African animal which reaches the size of a British ox. The horns of the male are long and straight.

Elba is an Italian island in the Mediterranean to which Napoleon Bona-

parte was banished, 2, 206, 410; 4, 154

Elbe is the name of a river of Germany. It rises in the " Bohemian diamond " and flows into the North Sea after a course of more than 700 miles, 4, 84

Elbe Gate is the name given to a gorge through which the river Elbe flows on its course from the " Bohemian diamond " to Dresden, 4, 84

Elcano was the name of the captain of Magellan's ship *Victoria*, the first vessel to sail round the world, 2, 285

El-Deir is the name of a temple at Petra in Trans-Jordan.
Picture: 4, 189

Elder. A tree often found in hedgerows and at the wayside. The fruit is used for making elderberry wine, 1, 305
Picture: 1, 347

Elder, Ground. See *Ground Elder.*

El Dorado was the fabled Land of Gold for which the Spaniards searched in the New World, 6, 101; 9, 358
—It is now known to us as British Guiana, 3, 385

Eldorado Mine is at Port Radium on Great Bear Lake in Canada's North-west Territories. Here pitchblende is obtained for producing radium and uranium.
Picture: 3, 191

Eldorado of the Pacific is the name sometimes given to New Guinea, 3, 390

Elections are a prominent feature of any system of democratic government. In this country we elect members of Parliament, as well as members of the local governing bodies—county councils, borough councils, urban district councils and rural district councils. The method of election is also widely used in this country for semi-public and private voluntary organisations of all kinds, for the democratic principle is engrained in our national life. Elections for Parliament and local authorities are carried out by secret ballot, 9, 49 *et seq.*
Pictures: An election on the Hustings, 9, 53
When Citizens Go to the Poll, 9, 55
Counting the Votes, 9, 56

Elector George, of Hanover. He afterwards became George I of England, 2, 178; 7, 160

Electric Catfish. Creature of African rivers which can impart an electric shock to anyone who touches it, 1, 219; 9, 367

Electric Eel. Five or six feet in length, this fish can impart an electric shock to human beings.
Pictures: 1, 219; 9, 367

Electric Eyes are used as race-timing apparatus, as burglar alarms, for counting and other purposes, 6, 233 *et seq.*
Pictures: Two Uses for Photo-Electric Cells, 6, 233
More Uses for " Electric Eyes," 6, 235
An Automatic Lamplighter, 6, 234

Electric Locomotives are lighter than steam engines of the same power because they do not have to carry water and coal, 5, 140

Electric Motor, A Simple. How to make a most interesting working model, 8, 369. With *Diagrams.*

Electricity is a form of energy which may be converted into heat, power, or other variations of energy. Although the existence of this force was known from the days of the Greek philosophers it was not until the end of the eighteenth century that any attempt was made to turn it to practical use. The story of its gradual development from William Gilbert's experiments in the reign of Queen Elizabeth I to the wireless and radar of our own times is told in *Electricity and Modern Science,* 7, 368 *et seq.*

Electricity and its Uses. The practical development of a great discovery and the work of the scientists in making these developments possible is told in this section, 6, 139 *et seq.*
—Questions and Answers concerning its uses and devices, 9, 303 *et seq.*
Pictures: How Electric Current Flows, 6, 139
When Electric Current Ceases, 6, 140
Two Simple Experiments, 6, 141
A Jar for Electrons, 6, 142
A Maker of Miniature Lighting, 6, 143
Artificial and Natural Lighting, 6, 144
Big Spheres for Big Experiments, 6, 145
Fireworks round an Insulator, 6, 146
How we got the Dynamo, 6, 147
Electric Lighting of Kingsway, London, 6, 148

Electricity, Heat and Light From. How electric current is made to work for us, 6, 157 *et seq.*
Pictures. Plastic Surgery in an Engineering Works, 6, 156
Sunshine Lighting in the Drawing Office, 6, 157
The Part that Drives, 6, 158
The Part that Stands Still, 6, 159
Making Electric Lamp Bulbs, 6, 160
Electronic Heater for Plastics, 6, 161
Mine Lighting by Fluorescent Lamps, 6, 162
Lighthouse Lamp, 6, 163
Sawing White-hot Metal While it Moves, 6, 165
Against the Background of Night, 6, 166

Electricity, How it is Supplied. Telling of our electric supply system, including generators, power stations, transformers and the " grid," 6, 289 *et seq.*
Pictures: A Maze of Conductors, 6, 289
Inside the Turbine House, 6, 290
Condensing Plant at Battersea, 6, 291
Light and Power in the Workroom, 6, 292
Undergoing a Change, 6, 293
Miniature Lightning, 6, 294
Electrical Fireworks, 6, 295
Metal Channels for Electric Current, 6, 296
Huge Electrical Switches, 6, 297
Putting an Electric Cable to Bed, 6, 298
Battersea Power Station, London, 6, 299
Kingston-on-Thames Power Station, 6, 300
At Cliff Quay, Ipswich, 6, 301
Man-high Insulators, 6, 302
From the Meter to the Lamp, 6, 303
" Stepping-up " the Voltage, 6, 304

Electricity in the House. How it works; the distribution board; fuses; meter, etc., 6, 299
Pictorial Diagrams: 6, 303
Electric Bells, 9, 305

Electric Lamps consist of heat-resisting filaments fixed in a glass container which is either a vacuum or gas-filled.
Picture: Making Electric Lamp Bulbs, 6, 160

Electric Power from Water, generally known as Hydro-Electric Power, has developed throughout the world since the first really large Hydro-electric plant was built at Niagara in 1892. The story of how water power is harnessed in different parts of the world is told in *Electric Power from Water,* 5, 63 *et seq*
Pictures: Thunder of the Waters (Niagara), 5, 63
A Modern Water Wheel, 5, 64
The Kaplan Type Runner, 5, 65
Like a Giant Snail, 5, 66
Supplying Power for the Grid, 5, 67
In Rhodesia and British Columbia, 5, 69
Loch Sloy Power Station, 5, 70
On the Banks of Loch Lomond, 5, 71
Inside the Loch Sloy Power House, 5, 72

Electric Power Cables have their wire conductors insulated by paper wrappings. Next comes a sheath of lead and then layers of jute and armouring wire.
Pictures: 6, 296

Electric Signs for advertising are very much in evidence in the big cities of this country and the U.S.A. Broadway, in New York, a street 13 miles long, is lit by so many of these signs that people call it the " White Way." In London these signs are worked with a switching device known as a " flasher," 6, 162

Electric Smith. Name given to an electrical welding appliance for joining metals together, 6, 164

Electric Storms. This is another name for thunderstorms, *q.v.*

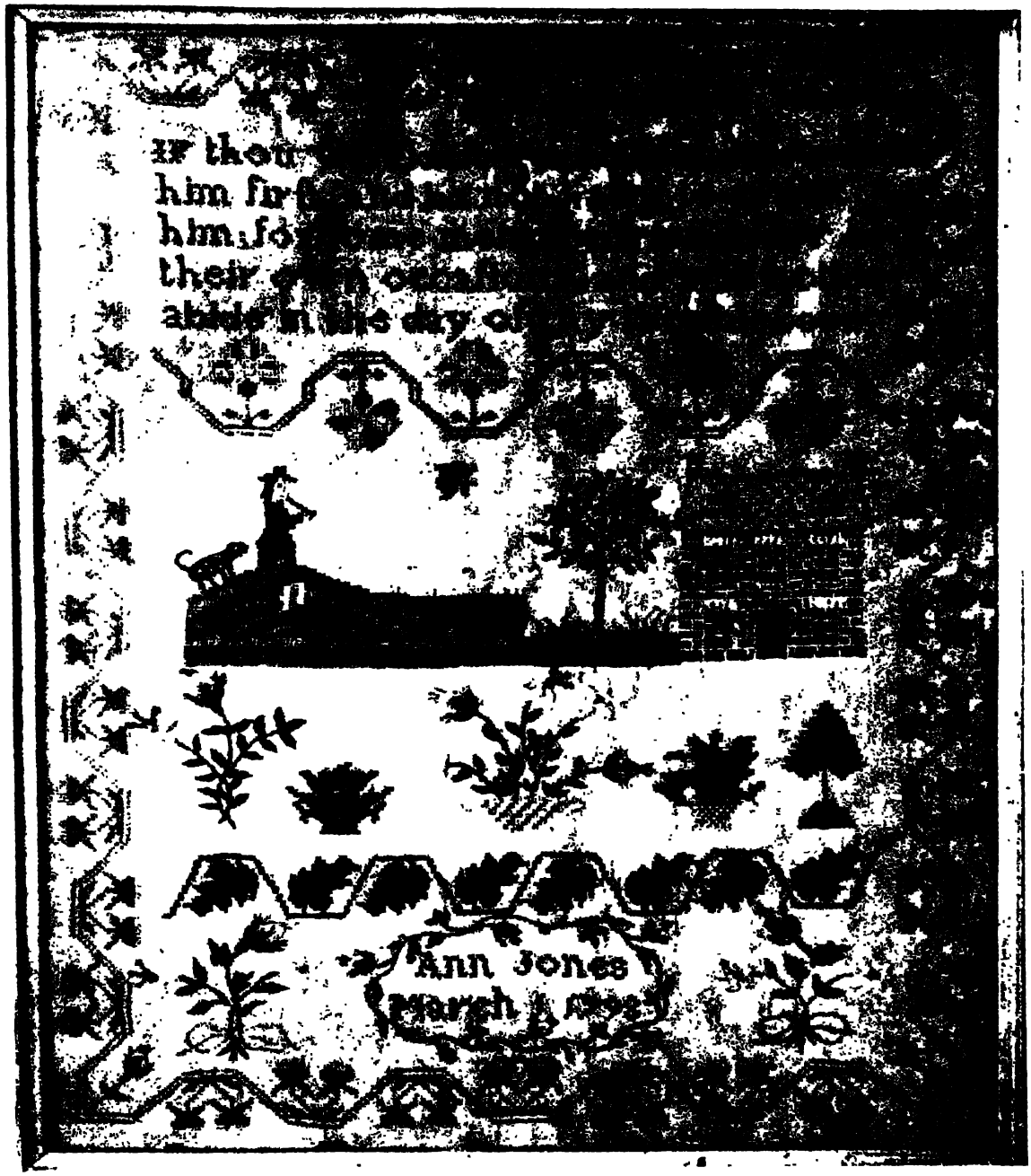
Electric Telegraph. See *Telegraph, Electric.*

Electrode. An end of a conductor connected with one pole of an electric generator or battery. It may take the form of a plate, rod or sphere, 6, 160
The two electrodes of an electro-plating bath are separated by the liquid used and the current flows from one to the other through it. The electrodes of an arc lamp are two carbon bars between which the arc is formed.
Picture: Big Spheres (electrodes) for big experiments, 6, 145

Electrolytic Copper is copper refined by electrical means, 6, 117

Electro-magnets are used in many electrical instruments, including telegraphic apparatus. They were invented by Sturgeon, 6, 149
Pictures: A Giant Electro-magnet 6, 152

AN 18th CENTURY SAMPLER



W. F. Mansell

Skill in needlework and *embroidery* (see p. 123) has always held a high place among feminine accomplishments, especially in the days when women's interests were also entirely confined to the home. From early in the 17th century until the beginning of this century it was the custom for young girls to show their skill with the needle in embroidering a sampler. The sampler seen above was embroidered by a schoolgirl towards the end of the 18th century.

Magnetism in the Hospital, 6, 153
An Electro-magnetic Separator, 6, 154

Electron. A minute body of negative electricity forming part of an atom. An electric current is the passage of electrons from atom to atom in a conductor, 6, 140
Pictures: How Electric Current Flows, 6, 139
When Electric Current Ceases, 6, 140
A Jar for Electrons, 6, 142

Electron Microscope is a recent invention capable of magnifying up to 50,000 times, 7, 412
Picture: 7, 415

Electrum, an alloy of silver and gold, was the metal used for their coins by Greeks in Lydia, 8, 291

Elektron is a Greek word meaning amber. From this electricity obtains its name, 6, 141

Elements. What were known as elements among the ancients were Earth, Water, Air and Fire. Today we regard an element as a substance which cannot be broken up into other substances, 9, 302

Elephant. The biggest of all land animals, 1, 31 ; 9, 363. (*p.h.*)
—found in India and Africa, 1, 65
—spring-cleaning at the Zoo, 1, 69
—tusks may weigh over 200 lb., 1, 66
—work it performs, 1, 66
Pictures: A Zoo Mother and Baby, 1, 65
African Elephant, 1, 69
At Work, 1, 66, 67, 68
Indian Elephant, 1, 69
Colour Plate: Elephants in Procession, 3, *facing* 285

Elephant Fish. A creature with a trunk-shaped snout with which it searches for food, 1, 226

Elephantine is the name of an island of the River Nile at Assuan, 4, 197

Elephant, The Earliest. Small, prehistoric creature that had no trunk, 1, 32

Elevator is the term used in Canada and elsewhere for a building in which threshed grain can be stored, 3, 177, 178
Pictures: Towering Grain Elevators near Saskatoon, 3, 182
Elevator is also used by Americans to mean a lift.

Elevators, as used on farms, are like spiked escalators. They convey newly cut hay or sheaves of corn to the rick or stack, 6, 387
Picture: 6, 389

Elf and the Dormouse, The. A Poem by Oliver Herford, 9, 116

Elfin Artist, The. A Poem by Alfred Noyes, 9, 102

Elgar, Sir Edward William, Bart., O.M. (1857–1934). Great English musician and composer. His *Land of Hope and Glory* has become almost a national anthem, 7, 190
Picture: 7, 190

Elgin is the county town of Moray, Scotland. It stands on the River Lossie and has woollen and other industries.

Elgin Marbles. A group of sculptured subjects brought by the Earl of Elgin from Greece early in the nineteenth century. They were afterwards placed in the British Museum, 9, 341
—horses' heads on the Marbles, 1, 93

Elginshire. Former name of a county of Scotland now known as *Moray* (*q.v.*)

El Hadhr is another name for the ruined city of *Hatra* (*q.v.*).

Eliot, George (1819–80). Pen-name of Marion Evans, outstanding English novelist. Author of *The Mill on the Floss, Adam Bede,* etc., 2, 411; 7, 216

Eliot, Thomas Stearns (born 1888). Anglo-American poet, he wrote *The Waste Land* and the poetic dramas *Murder in the Cathedral* and *Family Reunion.* He received the O.M. in 1948, 7, 156

Elixir of Life was the name given by the old alchemists to an imaginary fluid which, like the Philosopher's Stone, never existed except in imagination, 9, 303

Elizabeth (1465–1503) daughter of Edward IV and queen of King Henry VII whom she married in 1486, 2, 136, 406

Elizabeth I (1533–1603). Queen of England. Daughter of Henry VIII and Anne Boleyn. One of the most memorable English sovereigns, 2, 144 *et seq.*, 406. (*p.h.*)
—in the days of Queen Elizabeth, 2, 145
—Queen Elizabeth at Tilbury, 3, 25
—entertained at Kenilworth, 3, 70
—entertained at Charlecote House, 3, 407
Pictures: A Queen Reviews Her Soldiers, 2, 146
Signing the Death Warrant of Mary, Queen of Scots, 2, 147
Shakespeare Reading Before Queen Elizabeth, 2, 154
Queen Elizabeth's Visit to Bristol, 2, 409

Elizabeth (1635–1650) was the second daughter of King Charles I, 2, 163

Elizabeth, the Queen Mother. Born Lady Elizabeth Bowes-Lyon, daughter of the (late) Earl and Countess of Strathmore, she was married to H.R.H. the Duke of York in 1923, 2, 243 *et seq.*
Pictures: Coronation Day, 12th May, 1937, 2, 243
Royal Pageantry at Windsor, 2, 256

Elizabeth II (born 1926), Queen of Great Britain, Ireland and the British Dominions beyond the seas. She is the elder daughter of King George VI and Queen Elizabeth. She was born in London and christened Elizabeth Alexandra Mary. With her sister, Princess Margaret, she accompanied her mother and father on their tour of South Africa (1947). In November 1947 she married H.R.H. the Duke of Edinburgh (*q.v.*). In November, 1948, a son, Prince Charles, was born to the royal couple. A daughter, Princess Anne, was born in August, 1950. She succeeded to the Throne in February, 1952, and was crowned on June 2nd, 1953, 2, 261 *et seq.*, 416
Pictures; 2, 243, 261, 262, 264, 265

Elizabethville. A town in the Katanga province of the Belgian Congo, and a centre of copper-mining, 3, 300

Elk. The largest member of the deer family, having enormous antlers. It lives in the northern forests of the Old and New Worlds and stands higher at the shoulders than the average horse. The animal is also known as the Moose (*q.v.*), 1, 104

Ellesmere is a town of Shropshire, marketing centre for a large agricultural district.

Ellesmere Port, Cheshire, is on the Manchester Ship Canal.

Ellice Islands. A British possession in the South Pacific. They were once called the Lagoon Islands and are formed of coral. They constitute a colony with the Gilbert Islands.

Elliot, Jean (1727–1805). A poetess, she wrote the ballad *The Flowers of the Forest.*

Elliott, Charlotte (1789–1871). The author of *Just as I am, without one plea* and many other beautiful hymns. She ranks as one of our great hymn writers.

Elliptical means something having the form of an ellipse, which is an oval figure in geometry obtained when a cone is cut by any plane not parallel to the base or cutting it.
It may be described roughly as a "crushed" or "flattened" circle.

Ellis Island is situated in the harbour of New York. It is the place where incoming people from other countries undergo examination, 4, 269

Ellora. A ruined city of India near Aurangabad, 3, 324, 325
Picture: 3, 324

Ellwood, Thomas (1639–1713). A young Quaker, he was the friend of the poet John Milton.
Picture: 7, 137

Elm. A very common tree in all parts of the British Isles. The leaves are smaller than those of the Wych Elm (*q.v.*). A tall and upright tree with usually the one main trunk. It is shallow-rooted and the massive trunk may be brought down in any gale, 1, 402
Pictures: English Elm in Summer, 1, 322
Same Tree in Winter, 1, 323
Common Elm, 1, 399

Elmina Castle. A stronghold on the Gold Coast. It was sent out in sections from Portugal and erected there over five hundred years ago, 3, 380

El Molino is a coffee mill at Santa Ana in El Salvador, 4, 303

Elongated. Stretched out or lengthened; made longer than ordinary. Kipling tells us how the elephant's nose was elongated and became his trunk!

Elphege. An Archbishop of Canterbury who was captured and killed by the Danes. He died in 1012, 2, 90
Picture: 2, 91

El Piton, more than 12,000 ft. in height, is a peak of Tenerife, in the Canary Islands.

El Salvador is a republic of Central America. With a population of over 2 millions and an area of some 34,000 square miles it is the smallest and most thickly populated of the Central American states. Coffee is the chief product. San Salvador is the capital, 4, 302 *et seq.*
Pictures: On an El Salvador Coffee Plantation, 4, 302
In El Salvador's Capital, 4, 303

Elsinore in Denmark is famous for its

castle of Kronborg which is supposed to be that at which Hamlet saw the ghost of his father, **4**, 47
Picture: **4**, 45

Elswick, Newcastle-on-Tyne, is a town noted for its guns, machinery and other heavy products.

El Tell is the name given to the coastal plain of the Barbary states of North Africa (Morocco, Algeria, Tunisia). It is a fertile region where wheat, olives, and dates are grown, **4**, 166

Elterwater is one of the lakes of the English Lake District, its surface 200 ft. above sea level.
Picture: **3**, 88

El Tofo Mines are at Bethlehem, a town of Chile. They produce iron ore, **4**, 324

Elver. Name given to the young eel (*q.v.*) at the stage when it is about 2 in. long and nearly transparent. These elvers appear at river mouths in great numbers during the summer months after their first stage as "glass eels." They spread up the rivers where they grow slowly over several years, then return to the sea to spawn.

Ely is a city on the River Ouse in Cambridgeshire with a beautiful cathedral. Near by was the Camp of Refuge of Hereward the Wake, **2**, 94; **3**, 66
Photo-tone Supplement Ely Cathedral, **2**, *between* 128 and 129

Ely is the name given to a part of Cambridgeshire called the Isle of Ely.
—Hereward the Wake's last stand at Ely, **2**, 94; **3**, 66

Elysée is the name of a palace in Paris. Once a royal residence, it is now the seat of the President of the Republic, **4**, 12

Emancipation Act (1833). Abolished slavery throughout the British Empire, **2**, 210

Embassy. A person or persons sent by the government of one country to the court of another country, as its representative. The word means also the official residence of an ambassador, which is considered to be part of the country represented by him.

Embroidery consists of forming patterns and designs by needlework on various materials. *Embroidery Stitches*, with illustrations, **8**, 413 *et seq.*
Picture: 18th Century Sampler, **10**, 121

Emden. Name of a popular breed of domestic goose.

Emden is a town and seaport of Germany at the mouth of the River Ems on the North Sea, **4**, 80.

Emerald Buddha, The. He is the god who watches over Bangkok and the country of Siam. His image sits in the royal temple of the Grand Palace at Bangkok, **4**, 207
Pictures: The Shrine of the Emerald Buddha, **4**, 210
The Temple of the Emerald Buddha, **4**, 211

Emerald Isle is the name given all the world over to Ireland, **3**, 141

Emerald Lake is in the Canadian Rockies in British Columbia.
Photo-tone Supplement: Among the Canadian Rockies, **3**, *between* 160 and 161

Emergency. An unforeseen happening or occasion needing instant action. If a steamer strikes an iceberg, an emergency arises. Every passenger then dons a lifebelt provided for such an emergency.
A theatre, cinema or other place of public entertainment must be provided with emergency exits for use in case of fire.

Emerson, Ralph Waldo (1803-82). Great American essayist, lecturer and poet. He possessed a clear and brilliant style as a writer of prose and his poems had high quality, **7**, 152
Poem: The Mountain and the Squirrel, **9**, 116
Photo-tone Supplement: United States of America, **4**, *between* 272 and 273

Emery. A very hard black oxide of aluminium, used for grinding and polishing. Lumps of emery are broken up into powder, and grains of different sizes are then separated. Emery cloth is made by dusting emery powder on to a fabric coated with hot glue; and emery wheels by mixing the powder with some binding substance, moulding the mixture and baking in a furnace.

Emetic is the name given to something that will cause vomiting. Mustard dissolved in a tumbler of water is one emetic and salt with warm water another. An emetic ought never to be given to a person who has swallowed a poison that leaves a stain on the lips, mouth or fingers, **8**, 234

Emigration means departure from one's native land to another, in order to settle down and live there. The emigration of birds, such as swallows, in autumn is very interesting to study.

Emin, Pasha (1840 92). Went to Egypt in 1876 when General Gordon appointed him medical officer. He did much to abolish the slave trade.

Emmerich is a German town of the Rhine standing close to the Dutch border, **4**, 71

Emotion is a disturbance of the mind Fear and grief are painful emotions; joy a pleasant one. Emotions are stronger than mere feelings.
As the origin of the word implies, emotions move one out of one's usual state of mind.

Emperor Penguin. A bird of the Antarctic which has flippers like fins and can swim and dive, **1**, 194
See also *Penguin.*
Picture: **1**, 194

Empire Day is held on 24th May, the anniversary of Queen Victoria's birthday. It was inaugurated by the Earl of Meath.

Empire State Building, New York City, U.S.A., is the loftiest structure in the world. It is 1,248 feet in height and has 102 storeys above street level, **7**, 330
Picture: **4**, 270
Photo-tone Supplement: Modern Architecture, **7**, *between* 288 and 289

Empress of Scotland is a 26,000 ton liner belonging to the Canadian Pacific Company.
Picture: **5**, 262

Ems is a river of Germany about 200 miles in length emptying into the North Sea at Emden, **4**, 80

Emu. An Australian bird. Its plumage is almost like hair. It is ostrich-like in shape and nearly wingless, **3**, 246
Picture: **3**, 248
Photo-tone Supplement: Wild Life in Australasia, **1**, *between* 336 and 337

Enchanted Lyre. A mystifying appliance used by the British inventor Sir Charles Wheatstone, **5**, 110

Enchanter's Nightshade. See *Nightshades.*

Encke, Johann Franz (1791-1865). Famous German astronomer He found a rift in the rings of the planet Saturn, **8**, 152

Encyclopaedists, The. This was the name given to a group of French writers and thinkers whose work appeared in *Encyclopede* (published 1751-72). This was a publication containing explanations of current thought, philosophy, and politics, and counted such famous men as Voltaire, Rousseau, and Montesqueiu among its contributors, **4**, 10

Encyclopedia is the name given to a book or books in which information on all subjects is given in alphabetical order, or it may be an encyclopedia dealing fully with one branch of human knowledge, *e.g.*, gardening, natural history, sport, etc.
The earliest known encyclopedia was one on Natural History, written by Pliny the Elder (*c.* A.D. 23 79), but it was not until the invention of printing that the alphabetical arrangement was used. Ephraim Chambers brought out his *Cyclopedia or Universal Dictionary of Arts and Sciences* in 1728 and this may be regarded as the beginning of the modern type of encyclopedia The *Encyclopaedia Britannica* was first published in three volumes in 1771.

Endeavour, the Whitby-built ship in which Captain Cook voyaged to the Pacific for the Royal Society, **2**, 312

Endow means to enrich. Birds are endowed with the power of flight, that is, have it bestowed upon them by Nature; while men are endowed with mental powers greater than those of any other creature.

Endurance was the name of a famous vessel used in the Antarctic by Sir Ernest Shackleton.
Pictures. Landmarks Across the Ice Field, **2**, 374
Fast Amidst Ice Boulders, **2**, 375
The End of a Gallant Ship, **2**, 377

Enegu Coalfield. This lies north-east of the Niger delta in Nigeria. It has an outlet to the sea at Port Harcourt. Enegu town is the headquarters of government in the eastern provinces of Nigeria, **3**, 382

Energise. To give energy to. An engine-driver, by moving his regulator, admits steam to the cylinders of his engine and so energises it.
The warmer weather of spring energises vegetation and makes it grow.

Energy means power; capacity for doing work; activity. Heat, light,

electricity and the force of moving bodies are various forms of natural energy, which can be transformed one into the other.
A person who is full of " push and go " shows energy of character.

Engadine is the name given to a district of south-east Switzerland. It is a great touring and holiday centre.
Picture: **4**, 59

Engine. A general term which embraces all kinds of machines which convert one form of energy into another. Nowadays it usually means the steam-engine for various purposes (locomotive, stationary, etc.), gas engine, oil engine, internal combustion engines of various kinds.
See *Locomotive*, *Motor Car*, *Aeroplane*. etc. (*p.h.*)

England, once the home of the Angles, who came to it from Angleland, forms the southern part of Great Britain and has Wales on its western side. It occupies about two-thirds of the area of Great Britain and is in extreme length 430 miles and 370 miles in width, its whole area being some 50,000 square miles.
Its long coast line contains many fine harbours and ports and it includes the Isle of Wight and Isle of Man and the Channel Islands
The country is divided into forty counties, the largest of which is Yorkshire and the smallest Rutland.
The chief mountains are the Pennines; the Cumbrian Mountains; the Mendips; Cotswolds and Chilterns. Thames and Severn are the two longest rivers, the Tyne, Wear, Ouse and Trent being of great importance. Windermere is the largest lake. There are four main railway systems and about 150,000 miles of roads.
Coalfields are well scattered and have drawn industries round them. Cotton, woollens and other textile industries are mainly in Lancashire and Yorkshire; potteries in Staffordshire; iron and steel industries in the Black Country and many other parts, especially in the north. Sheffield is the centre for cutlery.
Essentially a farming country, grain and fodder crops are grown in most parts; hops in Kent; fruit in Kent, Worcestershire and Herefordshire. Cider is made in Devon, sheep being raised on the downlands of Wiltshire, Berkshire and Hampshire, as well as in Lincolnshire. Cattle-raising is a great industry of Cheshire, as is the manufacture of salt and cheese.
London, the largest port in the world, is the capital of England, as it is of the British Commonwealth of Nations. The population of the country is about 38 millions (excluding Wales), **3**, 1 *et seq.*
—*Questions and Answers* concerning England, **9**, 309, 310

England. A Poem by William Shakespeare, **9**, 96

England Expects that Every Man will do his Duty. Nelson's famous signal sent out during the Battle of Trafalgar, 1805, **2**, 206
Colour Plate: **8**, *facing* 45

English Antarctic Expedition (1840-42) was led by James Clark Ross (*q.v.*), **2**, 366

English Channel. The strip of water between England and France. It begins at the Strait of Dover, where it is only twenty-one miles in width, and continues to Land's End.

English Coalfields, and those of Scotland and Wales, attract other industries round them.
Pictorial Diagram: **6**, 10
Colour Plate: Above and Below Ground at a Colliery, **6**, *facing* 36

English Horn—See *Oboe*.

English Lake District. One of the most beautiful parts of our homeland situated in Cumberland, Westmorland and North Lancashire, **3**, 88, *et seq.*
—much of it is now in the care of the National Trust, **3**, 415
Picture: **3**, 413

English Language. Its development from Anglo-Saxon times to the Renaissance, **2**, 138

English Law. One of the two great European legal systems, the other being Roman Law. English Common Law dates back to the local customs of the Anglo-Saxons, while Statute Law is that ordained by Parliament.
See *In the Courts of Justice*, **9**,68 *et seq.*

English Riviera, The. Term used to describe the warm, genial resorts of the West of England, **3**, 42

Engulf. To swallow up; to absorb; to overwhelm by swallowing. In *The Last Days of Pompeii*, a book by Lord Lytton, we read how that town, at the foot of the volcano Vesuvius, was engulfed by cinders flung out during an eruption.

Enmity means the state of feeling of being an enemy; hatred. Enmity is stronger than mere ill-will, for there is danger of it passing from a feeling into action.

Ennerdale Water is the name of one of the lakes in the English Lake District.

Ennis is the county town of Clare, Eire.

Enniscorthy. A manufacturing town of County Wexford, Eire. It stands on the River Slaney.

Enniskillen is the principal town of Fermanagh, a county of Northern Ireland.

Ensa. *Abbrev.* for Entertainments National Service Association, an organisation which gave some 2½ million concerts, etc., to the armed forces and war workers during 1939-1946.

Ensign. A flag which is flown astern by ships to indicate nationality or, in some cases, the rank of the officer commanding the ship.
Colour Plate: Some Ensigns of Britain and the Commonwealth, **3**, *facing* 385

Entebbe is capital of the British Protectorate of Uganda, in East Africa. It is on a bank of Lake Victoria.

Entente Cordiale, meaning a cordial friendship or understanding, was the term used to express the sentiments of Britain and France towards one another under the inspiration of Edward VII. **2**, 225

Enthralling means intensely interesting. To enthrall means literally to make a thrall, that is, a slave, of a person. We use the word nowadays in a figurative sense only. An enthralling story makes a captive or slave of a listener or reader, putting him in thrall, or bondage, as it were.

Enthusiast. One who devotes himself wholeheartedly to some cause or pursuit. Most young folks are enthusiasts in the matter of games.

Entomological Pins, are used by collectors of butterflies and moths, and are coated with black enamel to prevent erosion, **8**, 283

Entomologist is the name given to one who collects insects, **8**, 281

Ent. Sta. Hall means Entered at Stationers' Hall. Compulsory registration of literary and artistic works at Stationers' Hall for copyright purposes ended on December 31st, 1923, but books and fine art works can be voluntarily filed there as proof, if necessary, that the work existed on a given date. (See *Copyright*)

Envelope means something which encloses or surrounds. We are all familiar with the envelopes in which letters are dispatched. The shell of a seed-pod is the envelope of the seeds; and the atmosphere is an envelope round the earth.

Envoy. A person sent by one government to treat with another. An envoy represents his government in all respects and has full power to act in its name.
Envoys rank next below ambassadors in the diplomatic service.

Epaminondas (418-362 B.C.). The greatest of Theban generals, he beat the hitherto invincible Spartans at Leuctra.

Epeios, in the Greek legends, was builder of the wooden horse of Troy, **5**, 368

Epernay is a town of France, on the River Marne. It is famous for its wines, especially champagne.
Picture: **4**, 15

Ephialtes was the name of a cowardly Greek traitor who showed the Persians a secret path, so betraying his countrymen who were defending the Pass of Thermopylæ, **2**, 28

Ephors, the publicly-chosen rulers of Sparta, in Ancient Greece, **2**, 16

Epic. A poem about heroes and heroic deeds. The earliest epics were Homer's *Iliad* and *Odyssey*. Next came Virgil's *Aeneid*.
The word is used also of a poem written in a grand manner about some great subject, such as Milton's *Paradise Lost* and Hardy's *Dynasts*.

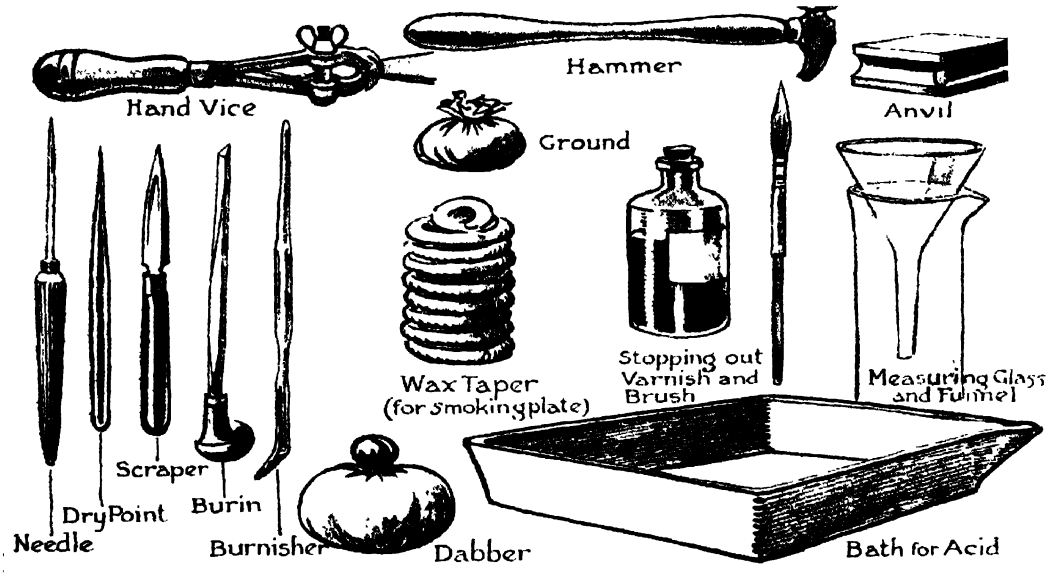
Epidermis is the term used to describe the upper portion of our skin.
Picture: **8**, 213

Epiphyte. A plant that lives on trees or rocks and has no direct connection with the soil.
Orchids growing in tropical forests are epiphytes.
Picture: **1**, 279

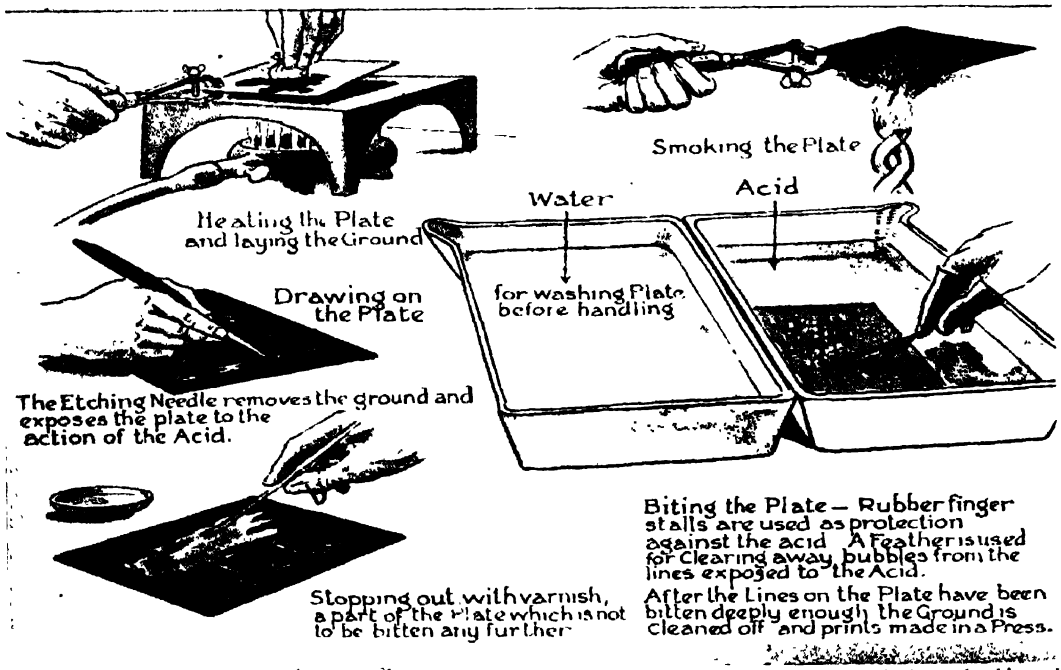
Episode. An incident; a happening. Every person, looking back on life, can recall some amusing, awkward and painful episodes in it.

Epitaph means an inscription on a

THE ETCHER'S TOOLS AND METHODS



TOOLS USED IN ETCHING



Specially drawn for this work.

The upper part of this illustration depicts the various tools and other articles used in the process of engraving pictures on metal plates called *etching* (see p. 127). The needle is used for cutting through the protective film spread on the plate; the dry point for cutting into the plate itself after etching with acid. The lower portion of the picture shows us a plate being prepared, drawn on, and etched in the acid bath. Wherever the acid gets access to the plate it bites into it. By stopping-out with varnish, the artist can arrest the etching of any part of the plate when it has gone far enough.

tombstone. It may merely refer to the dead, or may include suitable texts and verses.

Epping is a town of Essex, a centre for the tract of woodland known as Epping Forest.

E.P. Ranch is the name of a farmstead owned by H.R.H. the Duke of Windsor, when he was Edward, Prince of Wales, **3**, 180

Epsom is a town of Surrey. It is famous for the racecourse on Epsom Downs where the Derby and other classic horse races are run.

Epstein, Jacob. Born in New York in 1880, he ranks very high as a sculptor. His works include "Rima" in Hyde Park, London, and the figures of "Night and Day" at Broadway, Westminster, **7**, 235

Equal Franchise Act (1928). This act gave the vote to all adults in Britain and made the qualifications for men and women voters the same, **2**, 231

Equator. An imaginary line running round the earth half-way between the poles. It is the largest circle which can be drawn round the earth. The total measurement round the earth at the equator is approximately 24,902 miles. From the equator latitude is reckoned, both north and south.

The parts of the world to the north and south of the Equator are called respectively the Northern and Southern Hemispheres.

Day and night are almost of equal length at the equator, **9**, 307

Equatorial Africa, French. This overseas department of the French Union occupies the West African coast between the Belgian Congo and the Cameroons. Its capital is Brazzaville, and it is largely an undeveloped territory with important forest resources including wild rubber, **4**, 18

Eques was a title used in ancient Rome. It corresponds to our knight. The father of Ovid was an eques.

Equestrian means riding on horseback. An equestrian statue represents someone on horseback. An equestrian is a rider; and equestrianism means horsemanship.

Era. An age or period of time; a date from which any number of years begins to be reckoned; a succession of years counted from some happening. The Christian Era began with the birth of Christ.

The era of steam opened with the first practical steam engine.

Erasmus, Desiderius (1466-1536). Dutch scholar of well-deserved repute. He was a great student of theology and the friend and correspondent of many learned men of his time.

Erebus. One of Ross's ships in the English Antarctic Expedition (1840-42), **2**, 366, 372

—It was also the ship in which Sir John Franklin sailed in 1845 to find the North-West Passage, **2**, 303

Erica. Name given to a large family of heathers, plants which are cultivated in our gardens.

Ericsson, Lief. A famous sea rover, son of Eric the Red, who is believed to have voyaged from Greenland to North America about A.D. 1000, **3**, 155

Erie is one of the five Great Lakes of North America. It divides Canada from the United States and is 240 miles in length, **3**, 181; **4**, 266

—The *Erie Canal* runs to Albany on the River Hudson, **3**, 185

Pictorial Map. **4**, 291

Erin is very ancient name for Ireland. It has been much used by the poets, **3**, 141

Eritrea was formerly a colony of Italy on the Red Sea, to the north of Abyssinia. The capital is Asmara.

Erivan is the capital of Armenia, one of the Soviet Republics.

Ermezinde. A small town of Portugal, to the north of Oporto.

Picture: **1**, 115

Ermine. Name given to the stoat in northern parts during the winter months, **1**, 128

Erne. A river of Northern Ireland which flows into Donegal Bay.

Erne, Lough, is the name given to two lakes of County Fermanagh, Northern Ireland. There are the Upper and the Lower Lough Ernes, the former thirteen miles in length and the latter eighteen miles, **3**, 154

Eros. The god of love, represented as a youth, blindfolded, armed with arrows, and winged. His statue can be seen in Piccadilly Circus, London. (*p.h.*)

Picture: **3**, 12

Eros is the name of one of the asteroids. It comes nearer to the earth than any other heavenly body except the moon. It was discovered in 1898, and has proved to be of great usefulness in revising celestial distances, **8**, 148

Er Rifai is the name of one of the mosques in Cairo, the capital of Egypt.

Picture: **4**, 194

Erse is the name given to the Irish language, now taught in the schools of Eire, **3**, 153

Eruption. The act of breaking or bursting forth from an enclosure, a violent rushing forth of flames and hot ashes from a volcano.

Esbjerg is a large port and fishing centre of Denmark on the western side of the Jutland peninsula, **4**, 47, 354

Escalator. A moving staircase as used on London tube railways and in some large departmental stores.

—how it works, **9**, 345

Pictures. Eighty Feet on Moving Stairs, **5**, 135.

Going Upstairs Without Walking, **9**, 347

Escapade means a prank. The word is connected with escape and signifies the result of throwing off or escaping from restraint, and indulging one's love of mischief or fun, with sometimes amusing and sometimes disastrous results.

Escargot. Name given by the French to the edible snail, which forms a very popular dish.

Eschscholtzia. A hardy annual plant likely to thrive in dry places because it has a long tap root. Available in several colours. Also called the Californian Poppy, **8**, 277

Escorial. This is the name of a famous building erected by King Philip II of Spain on the south-western slopes of the Guadarrama mountains. It is palace, convent, church, and mausoleum in one and ranks as one of the most remarkable buildings in Europe.

Picture: **4**, 130

Escort. To accompany, as guard or protection, or as a compliment. In the course of a war merchant ships and transports are escorted by warships, which protect them against attacks from the air and by submarines.

Esdruelon, Plain of. This is the name given to the narrow plain which runs in a south-westerly direction from Haifa, the largest port in Palestine, **4**, 186

Esk is the name of well-known Scottish rivers. The first is a river of Midlothian, the North Esk and South Esk joined, which empties into the Firth of Forth. The North Esk is a river of Forfarshire and Kincardineshire, flowing into the North Sea. The South Esk is a river of Forfarshire which enters the sea at Montrose.

Esk, formed by the Black Esk and White Esk, separates Dumfriesshire from Cumberland and empties into Solway Firth.

Eskimos are found in Northern Canada, Alaska, Greenland and other parts in or adjacent to the Arctic. The people are yellowish-brown in colour and spend summers in tents and winters in their snow houses. They are famous as hunters and trappers, **3**, 162 *et seq*

Picture **3**, 157

Photo-tone Supplement. With the Eskimos of the Arctic. A feast in an Igloo, **2**, *between* 368 and 369

Esparto. A very tough, rush-like grass, used in the manufacture of paper. It is a native of the sandy districts of Spain and Northern France, **6**, 329

Picture Esparto Grass for High Quality Paper, **6**, 334

Esperance. A port of Western Australia linked by railway to the goldfields of Kalgoorlie

Pictorial Map: **3**, 242

Esperanto is an artificial "universal" language, invented by Dr. Zamenhof in 1887, **9**, 337

Esq. means Esquire, a form of address in general use. Originally it was a title of honour just below that of Knight. Among those who are legally esquires are the sons of peers, eldest sons of baronets and knights, justices of the peace, and barristers.

Esquimalt. A fishery port and naval dockyard on Vancouver Island, Canada.

Esquimaux is the French spelling of *Eskimo* (*q.v.*).

Essay means a short writing on some definite subject. To essay is to attempt, an essay being an attempt to treat a subject in comparatively few words.

Essen is a manufacturing town of Germany in the Ruhr Valley. It was the home of the Krupps' works and was largely destroyed during the Second World War, **4**, 80

Picture: **4**, 83

Essence is a concentrated or very strong extract. Vegetable essences are oils extracted from the fruit, flowers, leaves or bark of plants and usually dissolved in alcohol. Such essences are mostly employed as scents and flavourings.
We also use essence of beef and essence of coffee, prepared in different ways.

Essequibo is the name of the major river of British Guiana. It is about 600 miles in length, **3**, 385

Essex is a county of eastern England. It has a long coast line facing the North Sea whilst its southern boundary runs along the estuary of the Thames. The interests of Essex have largely to do with farming, especially the growing of grain, but there are many important industries in the towns, especially engineering and the making of agricultural machinery.
Harwich is a port for continental traffic and there are extensive docks at Tilbury. The county town is Chelmsford, **3**, 59 *et seq*
Pictures. From Tudor Times, **3**, 61
Outward Bound from Harwich, **3**, 64

Essex, Robert Devereux, Second Earl of (1567–1601). A prime favourite of Queen Elizabeth, he fell into disgrace, being tried for treason and executed, **2**, 154

Estancia is a Spanish word meaning "an estate." The *estancias* in the Argentine are very large, some of them covering half a million acres, **4**, 317

Estate in our time means a property, fortune or an important position. In 1295 we had the Estate of Lords and the Estate of Commons (instead of the House of Lords and House of Commons), and the leaders were called estatesmen (now statesmen), **2**, 110

Esthwaite Water is the name of one of the lakes in the English Lake District.

Estimate. To form a judgment or opinion upon any question; to judge the value or size, height or quantity of anything; to use reasoning powers in calculating the worth or cost of a piece of work; to reckon.
Surveyors estimate the value of a house by examining the structure and its equipment and surroundings.

Estonia. Once an independent state, Estonia has now returned to Russia and becomes a member of the U.S.S.R. as the Estonian Soviet Socialist Republic. Estonia is a Baltic state and her capital is Tallinn. Agriculture and dairy-farming are the main industries, **4**, 50, 52

Ests are the people of Estonia, the Baltic state that is now once more part of Russia, **4**, 52

Estuary. The wide mouth of a river where the tide meets the current and flows and ebbs. The word is connected with the idea of boiling or foaming.

Etangs d'Ixelles means "Ponds of Ixelles." Ixelles is a southern suburb of Brussels, the capital of Belgium.
Picture: **4**, 25

Etc. means *Et cetera*; and the rest; and other things.

Etching is the process of biting lines into a metal plate with acid. An etcher, that is, an artist who uses the process, works on a copper plate coated with a thin film of wax. With a sharp steel point he draws lines which cut through the wax and expose the metal. When the drawing of the picture or design is completed, the plate is put into a bath of acid, which etches or bites into, the exposed parts, producing tiny grooves wherever the steel point has touched the copper.
The plate, when properly etched, is cleaned, rubbed over with printing ink, and carefully wiped. All the grooves are now charged with ink, while the unetched parts are clean. When the plate is squeezed hard against soft paper in a powerful press the ink is transferred to the paper and a print, also called an etching, results.
In another method used by artists, called dry-point etching, the lines are cut direct by the steel point into the plate and no acid is used.
Picture **10**, 125

Etching Needle. An implement used by an artist when etching a picture on a metal plate.
Picture: **10**, 125

Eternal City is a name often given to Rome, the capital of Italy.

Ethelbald was a Saxon King of the English. Died 858

Ethelbert. King of Kent, he was baptised a Christian by St Augustine. Died 616, **2**, 83, 403

Ethelbert was also the name of a Saxon King of England who died 866.

Ethelfrith. A King of Northumbria. He was killed in battle in A.D 617, **2**, 403

Ethelred the Unready (968 1016). An English King. He imposed the Danegeld, a tax with which to bribe the Danes, **2**, 90

Ethelwulf. King of Wessex and father of Alfred the Great. He died 858, **2**, 85

Ether fills all the space around us not occupied by matter. It is because of ether that we can explain light, radiant heat, wireless waves and their actions, **5**, 95

Ethiopia, also known as Abyssinia, is an independent empire in north-east Africa. The country was conquered by the Italians in 1935–36. In 1941, the exiled emperor, Haile Selassie, with the aid of British forces, expelled the Italians and returned to the throne, **2**, 242, 245; **4**, 378

Etiquette. A code of good manners; the unwritten laws of courtesy which are observed between members of the same profession or players in a game, etc It includes ceremonial and other occasions, as well as the rules of behaviour in everyday social relationships. See *A Guide to Good Manners for Boys and Girls*, **9**, 181 *et seq.*

Etna is the name of a volcanic peak in the Italian Island of Sicily. It is over 10,000 ft. in height, **4**, 154, 364

Eton. A town of Buckinghamshire on the river Thames facing Windsor, which is on the Berkshire bank.

Eton College is one of our foremost public schools for boys founded more than 500 years ago, **2**, 134, 406
Picture. **3**, 27

Etruria is a district of Italy which includes part of the Apennines. It was once inhabited by the Etruscans.

Etruscans. A race of people that in olden times were masters of Italy. They were the first to use arches in building, **7**, 294

Ettrick. A river of Selkirkshire. Scotland. It joins the Tweed.

Ettrick Shepherd. See *Hogg, James.*

Eucalyptus is the name of a group of large evergreen trees found in Australia. They are known as "gum trees." Oil of eucalyptus is used in medicine. The jarrah tree belongs to this group **3**, 248
Pictures: An Australian Tree, **1**, 326
In Cumberland Valley, Victoria, **3**, 201
Looking Up a Gum Tree, **3**, 206

Euclid, who lived 300 years before Christian times, was a professor at the University of Alexandria, Egypt He invented the science of geometry called Euclid. His full Greek name was Eucleides, **7**, 340
Picture: **7**, 342

Eugene of Savoy, Prince (1663–1736) A famous soldier who helped Marlborough in his campaigns against the armies of King Louis XIV of France, **2**, 175, 177

Eugenics (*pron.* ujeniks) comes from the Greek and means "well-born." It was first used by Sir Francis Galton (*q v.*) to describe the study of methods to improve the mental and physical qualities of succeeding generations.

Eugenie, Empress (1826–1920), was the wife of the French Emperor, Napoleon III (*q.v.*). After the French defeat at Sedan in 1870 she came to live in England where she remained for the remainder of her life. **2**, 412

Euonymus. Name of a family of shrubs, many of them evergreen and quite hardy.

Eupatoria is a town and port of the Crimea, in the Soviet Union.

Euphrates. A great river of Mesopotamia which joins the Tigris and then enters the Persian Gulf It once divided the ancient city of Babylon, **2**, 8, 382; **4**, 199 *et seq* ; **9**, 11

Eurasia may be said to describe jointly the two continents of Europe and Asia, the word being a combination of both names A Eurasian is a person of mixed European and Asiatic blood.

Euripides (480–406 B.C.). One of the greatest of Greek tragedians and a friend of Socrates. (*p.h.*)

Europa was the name of a maiden, daughter of Agenor, king of Phœnicia, around whom the Greeks weaved some of their myths regarding the sun. Europa is "the broad spreading light" and from her name comes that of the continent of Europe.
According to Greek mythology Europa was courted by Zeus who appeared in the form of a white bull. Europa was induced to mount on the animal's back, whereon the god swam out to sea and transported her to Crete. (*p.h.*)

Europa is the name given to the smallest

of the four satellites of the planet Jupiter.
—discovered by Galileo, 8, 151

Europe is one of the continents, about 3,000 miles in extreme width and rather less than 2,500 miles from north to south. Its main features include the Alps, Pyrenees, Apennines, Carpathians, Sierra Nevada, and other mountain ranges, and the rivers Rhine, Rhone, Danube, Volga, Don, and Seine. With an area of some 3,750,000 square miles, Europe is approximately the same size as the Dominion of Canada. Its countries include the United Kingdom, France, Spain, Italy, Germany, the Soviet Union in Europe, Greece, Bulgaria, Rumania, Czechoslovakia, Austria, Belgium, Holland, Denmark, Norway, Sweden, Finland, and Switzerland.
Europe is rich in coal and iron, and oil is found in Rumania and in the Soviet Union. Its climate and regions vary from the cold and desolate Arctic lands to the warm Mediterranean lands, from the desert shores of the eastern and northern Caspian to the thickly-forested and mountainous Central Europe. See *The Continent of Europe*, 4, 1 *et seq.*

European Bison. An animal, also known as the auroch, that is almost extinct.

Evacuation. During the Second World War, many towns and cities were severely attacked by enemy aircraft. Children were therefore evacuated from these danger areas, being sent away to the country towns and villages where the danger was not so great.
Picture: 2, 248

Evangeline is the name of a poem by Longfellow which tells of the tragic expulsion of the first settlers from Nova Scotia. At Grand Pré, Nova Scotia, there is an Evangeline monument which commemorates their sad fate.
Picture: 3, 183

Evans, Marion. See *Eliot, George.*

Evans, Petty-Officer E., was with Captain Scott in the Antarctic, 2, 375, 376

Evaporate means to turn into vapour. Liquids and many solids evaporate if exposed to the air. The atmosphere becomes charged with moisture by evaporation from oceans and lakes.

Eve is the name of the first woman in the world, as is told in the Holy Bible.

Evelyn, John (1620-1706). A friend of Pepys. Like him, he kept a diary which was first published in 1818, 7, 196
Pictures: A New Whip for the Dutch, 7, 198
The Fire of London, 7, 199

Evening Primrose. A tall-growing biennial plant, the blooms of which are fertilised by moths, 8, 278

Evening Star is a name given to the planet Venus (*q.v.*) when she appears in the evening sky.

Evenlode. A Cotswold river which is a tributary of the Thames, which it joins a little above Oxford, 3, 25

Everest. The highest mountain in the world. It is in the Himalayas and rises to 29,002 ft. After a number of unsuccessful attempts it was eventually climbed by Edmund Hillary and the Sherpa, Tensing, of the British Expedition under Colonel John Hunt, on May 29th, 1953, 2, 389 *et seq.*; 3, 348 *et seq.*
Pictures; 2, 389, 391, 392

Everest, Sir George (1790–1866). A surveyor-general of India. He completed a survey of the Himalayas in 1841 and the world's loftiest peak is named after him.

Everlasting Flowers. The term applies to rhodanthe, helichrysum, acroclinium and certain other plants, the blossoms of which are dried and used for winter decoration.

Evesham is a town of Worcestershire. It stands on the River Avon and is marketing centre of a fruit-growing district.

Evolution. The gradual development of a living creature from a simple state to a more advanced state. The process can be traced in the history of many animals and plants.

Evzone is the name given to the Greek soldiers who mount guard at the Royal Palace in Athens. They wear traditional costume.
Picture: 4, 154

Ewe is the name we give to a female sheep, 6, 380
Picture: Sheep with Two Lambs, 6, 381

Excalibur was the name of the magic sword which King Arthur possessed. The name signified Cut-Steel and the scabbard protected its owner, 9, 340
Colour Plate: The Sword Excalibur, 5, *facing* 384

Excavator, Mammoth. A tremendous saving in man-power has been made by mechanical excavators, which have been in use for many years. A more recent development are monster excavators such as the "walking dragline."
Picture: 5, 179

Exchequer is a word used today when speaking of the public treasury which deals with the maintenance of public services and the raising of money to pay for them. At its head is a Chancellor. The exchequer was organised by Henry I and the word actually comes from the chequered tablecloth on which the money was then paid to the king's officer, 2, 97

ex div. means without dividend, *i.e.*, that one buys shares without the interest or dividend then due.

Exe is a river of Somerset and Devon about fifty miles in length. It rises on Exmoor, 3, 48

Exercise makes us breathe more quickly. Why is this? 8, 228

Exeter, capital of Devon, is an old Roman city. It has a magnificent cathedral and Elizabethan Guildhall, 3, 48

Exhibition, The Great. The first of its kind ever held, it took place in Hyde Park in 1851. Six millions of people are said to have visited it, 2, 216
Picture: 2, 214

Exmoor, partly in Somerset and partly in North Devon, is a high moorland tract where our largest wild animal, the red deer, may still be seen. Exmoor is the setting for Blackmore's *Lorna Doone*, 3, 44
Pictures: Badgworthy Water in the Doone Country, 3, 44
Where Dunkery Beacon was Lighted, 3, 411

Exmouth, a seaport, town and holiday resort of the South Devon coast, 3, 51

Exmouth Gulf. A broad inlet on the west coast of Western Australia. One of the world's largest potential oilfields is said to exist around the Gulf, 3, 240

Exon. means *Exoniensis,* of Exeter

Eyck, Hubert Van (1365–1426), and his brother Jan (1385-1440) were two famous Flemish painters. They were the originators of painting in oil and have a memorial at Ghent, 7, 8
Pictures: In the Flemish Style, 7, 8
The Man with the Pinks, 7, 9

Eyebright. Wild flower belonging to the foxglove group, 1, 302

Eyemouth is a fishery centre of Berwickshire, Scotland. It stands on the River Eye.

Eyes. As a matter of first aid, if you can see a speck lying under the lid or on the eyeball, very gently try to remove it with a wisp of cotton wool, the corner of a clean handkerchief or a camel's hair brush. Otherwise, consult a doctor.
Bruised ("black") eyes should be treated by cold bathing and a pad of lint or a folded handkerchief soaked in cold water bandaged over the eye, 8, 240

Eyespot. A fungus disease which attacks wheat. Experiments to control and eventually eliminate this threat to our harvests are carried out at Rothamsted and other experimental and research stations.
Pictures: A Threat to Our Food Crops, 1, 386

Eylau, a town in Poland where Napoleon defeated a combined force of Russians and Prussians (1807), 2, 201

Eyra. An animal found in parts of South America. Of weasel-like form, it can best be described as a wild cat.

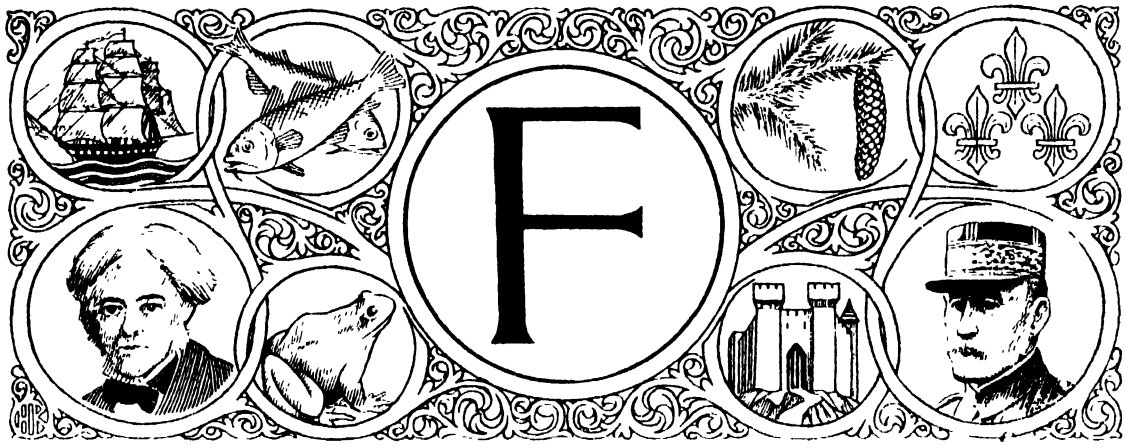
Eyre, Edward John (1815-1901). Australian explorer and colonial governor. He emigrated from England at the age of 17 and later tried to reach the heart of the Australian continent (1840). His exploration linked south and western Australia. He later became Lieutenant-Governor of Australia and afterwards Governor of Jamaica. He died in England, 3, 204

Eyre. A large lake of South Australia, named after its discoverer, E. J. Eyre. The area of this lake is about 4,000 square miles, though it becomes mere marshland in dry seasons.

Eyrie. Name given to the home or nest of the golden eagle (*q.v.*) and other birds of prey.

Eyston, Captain G. E. T. Famous racing motorist, 5, 176
Pictures: Faster than the Camera's Lens and Shutter, 5, 176
The Car "Thunderbolt," 5, 171

Ezekiel (sixth century B.C.). One of the great prophets.



Fabius the Lingerer (died 203 B.C.). A Roman soldier who dared not give battle to Hannibal, **2**, 68

Fable. At one time the word was used of any fictitious narrative, but it is now commonly applied to a story in which birds or animals are the chief actors and use the speech of human beings.

- Fable, Myth and Legend. Tales for Nursery Folk, **5**, 289 *et seq.*

Fabre, Jean Henri (1823-1915) was a schoolmaster and has been called the "insects' Homer." At the age of thirty-two his first series of insect studies brought him a prize from the French Institute.

Facsimile. An exact copy or likeness. Some forgers are very expert in producing facsimiles of signatures, documents or banknotes which will deceive anyone but an expert.

By means of special inks and pads one may quickly make a number of facsimiles of written matter. Photography is used for reproducing old documents and books in facsimile.

Factory Acts were those passed to improve conditions in Factories in Britain. Under the Act of 1833, inspectors were appointed and it was forbidden to employ children under the age of nine in the factories, **2**, 210, 220, 411

Picture: Child Labour in the Early Textile Factories, **2**, 211

Faerie Queen, The. Famous poem by Edmund Spenser (*q.v.*).

—Tales from the *Faerie Queen*, **5**, 397 *et seq.*

Fahr. means Fahrenheit, as applied to a thermometer.

Fahrenheit, Gabriel Daniel (1686–1736). A German, he invented the type of thermometer which bears his name. It shows freezing point at 32°, **5**, 7

Fainting. As a matter of first aid, keep the patient lying down with the head lower than the body if possible. Give stimulants—smelling salts held to the nose and cold water sprinkled on the face.

Do not let people crowd round. Loosen clothing at the neck and chest, **8**, 241

Fairbanks is a town of Alaska, on the Alcan Highway, **3**, 197

F is the sixth letter in our alphabet, as in the Latin and in those of other languages derived from Latin. The Greeks of classical times did not use it. Grammarians call F a spirant, or breathing letter, because the sound is produced by expelling the breath gently between the lower lip and the upper teeth.

We could do without F, since its sound can be equally well represented by PH, as in "elephant," "pheasant," and "photography."

As a musical note, F is the fourth note of the scale of C.

We find F. as an abbreviation on thermometers for Fahrenheit; and in F.O. (Foreign Office). Chemists use F as the symbol for the element fluorine.

Fairbridge Farm Schools. These schools were originated by Kingsley Fairbridge (1885–1924) in Britain and the Dominions to provide education and a career in the Dominions for boys and girls who have been deprived of the usual opportunities.

Fair-Days, *i.e.*, the days on which fairs were held, were most important to people in the Middle Ages, **2**, 124

Fairey Gyrodyne. A modern Helicopter which set up an international speed record for this type of machine, **5**, 236

Fairey Swordfish and Fairey Albacore. Names of two famous aeroplanes with which the Royal Navy was once equipped, **5**, 214

Fairfax is the name of two parliamentary generals, father and son, in the Civil Wars. The more famous is the son, Thomas (1612–71), who was parliamentary commander-in-chief. He was overshadowed by his cavalry commander, Oliver Cromwell, with whom he helped to form the new Model Army, **2**, 162

Fairies' Glove is another name for *foxglove* (*q.v.*).

Fairies, The. A Poem by William Allingham, **9**, 188

Fairies' Song, The. A Poem by William Shakespeare, **9**, 94

Colour Plate: **9**, *Frontispiece.*

Fair Isle is one of the Shetlands, off the Scottish coast. It is noted for its woollen products.

Fairlop Oak. Name of a famous tree which grew in Hainault Forest, **1**, 332

Fairweather, Mount, is a peak of Alaska. It is 15,300 ft. high, **4**, 294

Fairy. A legendary or mythical little creature who lives with other fairies in some land of enchantment; a dainty little person who can also enchant others and do wonderful things for ordinary human beings. They may change their own form at times and appear as witches.

The earliest fairy stories to be published in book form appeared in Paris in 1697, probably written by Pierre Perrault. Among the stories in this collection were *Cinderella, Puss-in-Boots, The Sleeping Beauty* and *Red Riding Hood.* See *Fable, Myth and Legend*, **5**, 289 *et seq.*

See also *Fairy Stories and Nursery Rhymes*, **7**, 267 *et seq.*

Picture: Cinderella and the Glass Slipper, **10**, 131

Fairy Champignon. A mushroom that grows in rings in the open fields, **1**, 360

Fairy Parachutes. How some plants distribute their seeds by means of winged cases, **1**, 374

Fairy Rings are often found in grass, especially on downland and in lawns. Caused by circles of fungi, they tend to spread outwards every year, **9**, 372

Fairy Went A-Marketing, A. Poem by Rose Fyleman, **9**, 114

Fakir. This is the name given to the religious mendicants found in India. They may belong to many different religions and will sometimes have inflicted torture on themselves to prove their devotion. They beg their way from place to place.

Fal is a river of Cornwall. It enters the sea at Falmouth, **3**, 48

Falaise. A small town of northern France, near Caen. It was the birthplace of William the Conqueror.

Falangist. A member of the *Falange*, the Spanish Fascist party.

Falcon. A family of birds of prey which have thick hooked beaks, long

curved claws, and are the swiftest of birds in flight. The peregrine falcon is one of the kinds still found in Britain. It was formerly trained to bring down birds when hawking was a sport of Kings. Other species include the Greenland falcon, the kestrel, the merlin and the hobby, all members of this family which are found in Britain.

Falcon III. Name of a famous glider which remained in the air 22 hours, 13 minutes.
Picture: 5, 212

Falkirk is a town of Stirlingshire, Scotland. It is famous for its iron-works, where stoves are largely made and now has aluminium works, 3, 121

Falkland Islands. A British colony in the South Atlantic consisting of the islands of East Falkland, West Falkland, South Georgia, and certain smaller islands. The capital of the colony is Stanley. There is a whaling settlement on South Georgia, and whaling and sheep farming form the main industries, 3, 394

Fallow Deer. A species of deer with broad antlers. Smaller than the red deer and larger than the roebuck, 1, 104

Falls of Foyers is the name of two waterfalls near Loch Ness in Inverness-shire. Their power is used for making electricity, 3, 128

Falmouth is an important shipping centre and holiday resort on the coast of South Cornwall. It has a fishing fleet, 3, 46

False Acacia. A handsome hardy tree from North America.
Picture: 1, 291

Famagusta. The chief port of Cyprus. The name means "hidden in the sands," 3, 388

Fane. A temple or church. We use the word specially of a large church. London's two greatest fanes are St. Paul's Cathedral and Westminster Abbey.

Fantail is the name of a variety of pigeon specially suited to life in a cote in the garden, 8, 321
Picture: 8, 323

Fan-Tailed Goldfish. One of the most common of fancy goldfish, 1, 225

Fantasia. The name of a Walt Disney film which was based on well-known music. Fairies and animals, flowers and people, all played their parts in it.
Picture: 9, 288

Faraday, Michael (1791–1867). Son of a Yorkshire blacksmith, he made 16,000 experimental researches into chemistry, electricity and magnetism, 6, 148; 7, 370. (*p.h.*)
Pictures: How We Got the Dynamo, 6, 147
Michael Faraday Lecturing, 7, 368
An Historic Magnet, 7, 370
A Great Master and a Greater Pupil, 7, 373

Farinha, used in Brazil for making bread and cakes, is obtained from cassava roots, 4, 316

Farm. The word originally meant land and buildings which were rented or held by a tenant. Nowadays it is applied generally to land cultivated to produce food crops. The words "home farm" are still used to designate a particular farm on a large estate which is cultivated by the owner of the property
There are some 280,000 farms of under 100 acres in England and Wales, 70,000 between 100 and 300 acres and 12,000 farms above 300 acres. The figures for Scotland are 60,000, 12,500 and 2,400. Over two million acres were growing wheat in 1951, but in the peak year of 1943 over three million acres were wheat-sown.
Machinery is being increasingly employed and nearly 200,000 tractors are now used in England and Wales.
—Science Comes to the Farm, 1, 385 *et seq.*
—The Farmer's Busy Year, 6, 379 *et seq.*

Farman, Henri (born 1874). French pioneer in aviation and an early manufacturer of aircraft in conjunction with his brother, Maurice. He set up an early record by flying 100 miles.
Picture: 5, 193

Farmer's Busy Year, The. An account of farm life as it is carried on through the four seasons of the year, 6, 379 *et seq.*
Pictures: The Farmer's Boy—Modern Version, 6, 379
A Fine Herd of Jersey Cows, 6, 380
The Sheep with Two Lambs, 6, 381
Feeding Time with the Pigs, 6, 382
A Lamb and Its Nurse, 6, 383
Two Profitable Nanny Goats, 6, 384
Preparing for Sowing, 6, 386
Heavy Work on the Land, 6, 386
Getting in the Harvest, 6, 387
There's Joy in the Harvest, 6, 388
Last Load Home, The Mechanical Elevator, 6, 389
A Portable Grass-Drying Machine, 6, 390
With the Threshing Gang, 6, 391
Learning an Old-World Art, 6, 392
A Farm of Old England, 6, 393
In the Stack Yard, 6, 394
A Wiltshire Barley Harvest, 6, 395
Reaping in the Modern Manner, 6, 396
Building-up Stooks, 6, 397
Gathering the Harvest of Wayside Crops, 6, 398

Farnborough. (1) A town of Hampshire in the Aldershot area. Here much experimental work was carried on in the early days of flying and the place is now a centre of the Royal Aircraft Establishment.
(2) A residential town of Kent.

Farne Islands. Rocky islets just off the Northumberland coast, associated with Grace Darling and with St. Cuthbert.
Picture: 1, 203

Farnham is a town of Surrey, standing on the River Wey. Its castle is a seat of the Bishop of Winchester. Hops are among the agricultural crops of the district.

Farnol, John Jeffery (born 1878). English novelist, he made a great reputation with *The Broad Highway* and *Beltane the Smith.*

Farnworth is one of the cotton and textile towns of Lancashire. It has collieries and is also an engineering centre.

Faroe Islands. This group is found in the North Sea between the Shetlands and Iceland. They belong to Denmark and have important fishery interests as well as sheep-farming. The capital is Thorshavn, 2, 299

Farouk Airport. This is some 12 miles from Cairo and is used by many different airlines including Air France, Air India, and K.L.M., 4, 195

Fascist was the name given to a member of the Italian society founded in 1919 by Mussolini (*q v.*).

Fastnet Rock, with its famous lighthouse, is a point on the coast of County Cork, Eire.
Picture: 3, 153

Fates, The. Three goddesses of Greek mythology, 9, 340

Father of Medicine was the name given to Hippocrates (400–377 B.C.), 7, 379
Picture: 7, 379

Father of Waters is the name given to the River Mississippi, 4, 263, 292

Fathom means to understand; to find the meaning of. To find the depth of the ocean, soundings are taken, and the measurements thus made are expressed in fathoms, a fathom being a measure of 6 ft.

Fault. The position when strata or layers of the earth's crust slip owing to underground upheavals.
Pictures: 1, 4 and 5

Fauré, Gabriel (1845–1924). French musical composer. He wrote piano pieces and chamber music, 7, 188

Faust was a German scholar of the sixteenth century who was said to have sold his soul to the Devil in return for certain privileges for twenty-four years. Around his name many plays, poems and legends have been written.

Faversham. A port and town of Kent, an important trading centre. It has interests in brewing and possesses oyster beds. Its history goes back to about 811.

Fawcett, Henry (1833–84). As Postmaster-General, he established Parcels Post, Postal Orders and the sixpenny telegram. He became blind when twenty-five years old.

Fawkes, Guy (1570–1606). A soldier of great personal bravery entrusted by Catesby and the Gunpowder Plot conspirators with the firing of the powder that was to have blown up the Houses of Parliament (1605), 2, 157, 407
Picture: 2, 156

Fawley is near Southampton, and here in 1951 was opened the largest oil refinery in Europe. It will be completed in 1953.
Pictures: 6, 311

Fawns. Name given to the young of deer, 1, 104

Fazenda is the term used to describe a coffee estate in Brazil, 4, 312
Picture: 4, 317

Fcp. means foolscap.

Fear, Cape, off the coast of North Carolina, U.S.A., was discovered by the navigator Verrazano, 1524, 2, 294

Feathering is a feature of embroidery. The work is generally done in cotton thread, but may be carried out in silk, 8, 413
Picture: 8, 414

fec. means *fecit, i.e.,* he did it.

Fécamp is a coastal town of Normandy

CINDERELLA AND THE GLASS SLIPPER



From ancient times and in most countries, the story in which a *fairy* (see p. 129) plays a part has been popular. Probably best-known of all is Cinderella, cruelly treated by her step-sisters



The sisters go to the ball and Cinderella in her rags is alone when the Good Fairy appears She transforms a pumpkin into a golden coach and the mice become fine horses.



Cinderella's beauty attracts the Prince, but she almost forgets to leave at midnight, as promised. In her haste to leave in time she drops one of her lovely glass slippers.



Specially drawn for this work.

The Prince searches for the one girl who alone can wear the glass slipper. He finds Cinderella and asks her to become his Princess. So they marry and live happy ever after.

looking out over the English Channel. The French coast here is very like our own south coast.
Picture: **4**, 1

Federal Capital Territory is the name given to the "island" of land within the boundaries of New South Wales, Australia, which has been set apart as a place for Canberra, the Federal Capital of the Commonwealth, **3**, 235
Picture: **3**, 199
Pictorial Map: **3**, 243

Feelers. See *Antennæ.*

Feisal, Emir. A famous Arabian soldier, he fought with General Allenby in Palestine, becoming King of Iraq, **2**, 383
Picture: **2**, 386

Felixstowe. A popular Suffolk seaside resort at the mouth of the River Orwell, **3**, 59

Fellahin is the word used in Egypt to describe the peasant farmers of that country, **4**, 194

Felling is a term used in needlework. It means to fold over a very narrow hem, tacking it and hemming it down neatly, **8**, 410

Felloe is the name given to the rim of a wheel. The word is pronounced *felly*, **5**, 158

Fenlands, The. Sometimes known as the English Holland, **3**, 66 *et seq.*

Fenn, George Manville (1831–1909). Author of a very large number of books for girls and boys.

Fennec. A small sort of fox to be found in Northern Africa. It has very large ears and a bushy tail.

Fennel. A tall-growing herb used for the flavouring of sauces.
—as a pest in Brazil, **1**, 338

Fens is the name given to a part of England in Lincolnshire, Huntingdonshire, Cambridgeshire and other counties. Slow-flowing rivers keep the district marshy, but embankments have been made to prevent floods, **3**, 66 *et seq.*
—Hereward the Wake in the Fens, **2**, 94
Picture: A Postman of the Fens, **6**, 280

Fenton is a district of the Potteries. It is included in the borough of Stoke-on-Trent, **3**, 73

Fer-de-Lance. Name of a snake found in Martinique.

Ferdinand and Isabella. Ferdinand V (1452–1516) was King of Spain and Isabella his Queen. They gave great support to Christopher Columbus, **2**, 275
Picture: **2**, 274

Fermanagh is a county of Northern Ireland, its interests being mainly those of farming. It is partly divided by Lough Erne. The principal town is Enniskillen, **3**, 141

Fermentation. A change brought about in a substance by the action of tiny living organisms or of certain chemical products called enzymes. The baker uses a ferment known as yeast to "raise" his dough; and the brewer uses it to change malt liquor into beer. The fermentation of jam is due to the multiplication of a similar living vegetable organism.

Fermoy is a town of Cork, Eire. It stands on the Blackwater, an important salmon river.

Fern. The true ferns are a group of non-flowering plants, mostly perennial, with low-growing root-stock. The leaves, known as fronds, vary widely in shape and size. In Britain the most common kinds belong to the Polypodiaceæ family which includes the polypody, hart's tongue, the maidenhair, shield and male fern and bracken.

Ferrara. An ancient city of Northern Italy. It was a great centre of medieval art.

Ferret. A small animal related to the badger, weasel and the polecat, and can be described as a semi-domesticated type of polecat. It is about 14 in. long, and is used to hunt rabbits.

Fertilisers. Chemical compounds used to restore to the soil various elements and ingredients abstracted from it by the plants during their growth. Their use has increased enormously during the present century, **1**, 387

Festiniog is a town of Merionethshire, Wales. In the neighbourhood slate is quarried.

Festiniog Railway is a railway in North Wales which has a gauge of only 1 ft. 11½ in. It uses an unusual type of locomotive, "two engines in one."
Colour Plate: "Fairlie" Type Engine, **5**, *facing* 128 (Plate 4)

Festival of Britain. This marked the centenary of the Great Exhibition held in the Crystal Palace, Hyde Park, London, in 1851. The 1951 Festival had its main Exhibition on the South Bank of the Thames, London, and was opened by King George VI from the steps of St. Paul's on May 3rd 1951. Other festivals and exhibitions covering Industries, Science and the Arts were held in many provincial centres.

Fête of Ramazan. See *Ramadan.*

Fettling is a term used in a metal foundry. It refers to the process of cleaning castings, **6**, 53, 66

Feudal System. Besides meaning "lasting hostility between two people or clans," the word feud means an estate held on condition of service. Thus, the feudal system was one under which land was held provided service was given. The system was developed in Europe during the fourth and fifth centuries and was introduced into England by William the Conqueror, **2**, 96, 404

Feverfew. A plant of the pyrethrum family. It is used in the making of medicines, **1**, 333

Fez is one of the traditional capitals of Morocco. It stands in the French zone of that country which is largely a French protectorate, **4**, 166

Fianna Fail (*pron.* fē-an-a-foil) is the name of the Irish Republican party, founded by Eamon de Valera in 1927. It held power in Eire from 1932 to 1948 and again in 1951.

Fiction. Stories and writing based on the imagination; that which is invented or imagined.

Fid Def. This abbreviation stands for "Fidei Defensor" (Defender of the Faith) a title conferred on Henry VIII by the Pope and since borne by all our sovereigns, **2**, 142

Fiddle. Old English name for the violin and earlier instruments of the same type, **5**, 112. See *Orchestra, Violin.*
Picture: The Principle of the Fiddle String, **5**, 113

Fiddler Crab. Sometimes known as the Velvet Fiddler Crab from the nature of its coat when moulting its shell, **1**, 238
Picture: **1**, 236

Fidelity. Faithfulness; exactness. The dog is loved above all other animals for its great fidelity to its master. A photograph is able to reproduce the details of an object with wonderful fidelity in the second sense.

Fido stands for Fog, Intensive, Dispersal Operations; a body of scientists worked on this problem during the war and made it possible to reduce fog in the vicinity of airfields, thus enabling returning aircraft to land in safety, **7**, 394
Picture: **7**, 391

Field, Cyrus (1819–92). An American business man who had much to do with the construction of the first transatlantic cable. The cable was completed in 1858.

Field Ballista was the name given to a military machine. It was used in warfare in early ages for hurling missiles at the enemy.

Fieldfare. One of our winter visitors among migratory birds. It is thrush-like in appearance.
Colour plate. **1**, *between* 160 and 161 (Plate 3).

Field Gentian. A wild plant bearing tubular lilac flowers, **1**, 303

Fielding, Henry (1707–54). One of the most celebrated of eighteenth century novelists. Author of *The History of Tom Jones.* He became a J.P. and interested himself in improving the condition of prisons.
—He was also a magistrate and the founder of the "Bow Street Police," **9**, 76

Field Mouse. Not unlike the house mouse; it is also known as the field vole (*q.v.*).
—spoor of the field mouse, **1**, 124

Field poppy. See *Poppy.*

Field rose. See *Wild Rose.*

Field Scabious. Wild plant with lilac blossoms like cornflowers, **1**, 302

Field Vole. About the size of the house mouse but with a shorter tail. One of the rodents. Also known as the field mouse.
Pictures: Field Vole, **1**, 137
Short-tailed Field Vole, **1**, 133

Fier. A tributary of the river Rhone. It is linked by the Thioux Canal with the lake of Annecy in the Haute Savoie department of France.
Picture: **4**, 16

Fiesole. An ancient town of Italy with a famous cathedral. It is associated with the Tuscans and has many relics of the Roman Empire.

Fife is a county of Scotland between the Firth of Forth and the Firth of Tay on the eastern side of the country. It is a district of many manufactures and industries and has coalfields. A noted centre of Scottish agriculture.
Cupar is the county town.
—the Fife coalfield, **3**, 121

Fife. The fife is a small flute (*q.v.*),

and is familiar to us particularly in the military " drum and fife " band. At the battle of St. Quentin (1557) a drum and fife was allowed for each 100 of foot soldiers, indicating the origin of the present-day military band.
See *Musical Instruments.*

" Fifteen." The common name for the Jacobite rebellion of 1715 in favour of Pretender James. The Jacobite army was defeated at Preston and Sheriffmuir and the Pretender returned to France, **2**, 180
Picture: **2**, 179

Fifteen-Spined Stickleback. A sea-fish which builds a nest of seaweed, **1**, 208
Picture: **1**, 207

Fig, means figure or diagram. Used generally with illustrations.

Fight with the Dragon, The. A Tale from the Faerie Queen, **5**, 405

Figs are the fruit of the fig tree. The dried fruit is imported from warm countries whilst that grown at home is eaten in the form of green figs.

Figurehead. A carved figure or ornament which was originally placed on the prow of a war vessel Possibly the original idea was that a ship was a living thing. Later the figurehead was used as an above-water ram, but the bigger warships continued them for ornamental and sentimental reasons With the passing of sails the figurehead had no practical value of any kind and has almost completely disappeared from modern ships Many of the figureheads from old British warships are still preserved in the royal dockyards
Pictures **10**, 135

Figures: Games to Play with Them. First lessons in counting for the tiny tots, with pictures and stories, **9**, 135 *et seq.*

Figwort, Water. See *Water Figwort.*

Fiji. A group of islands in the Pacific that form a British colony. The largest island (there are more than 300) is Viti Levu, on which the capital, Suva, stands. Sugar, coconuts, and rice are the main products, **3**, 380
Picture: **3**, 392
—visited by King George VI when Duke of York, **2**, 244

Filament. A fine thread; a fibre; one of the slender threads of which nerves, skin, plants, roots and flesh are composed.

Fildes, Sir Luke (1844-1927). An English artist, he painted many fine pictures and portraits. He was born at Liverpool. Elected R.A. in 1887.

Filey, a few miles from Flamborough Head, is a popular coastal resort and holiday centre of Yorkshire. A bluff ridge of rock called " Filey Brigg " runs out into the sea.

Filipeppi, Alessandro See *Botticelli.*

Filipino is the name given to the people of the Republic of the Philippines They are Malayan in origin and are mostly Christian in religion, **4**, 214

Film Making has developed in comparatively recent years into a great industry, and though America with its great studios at Hollywood led the way for some years, British producers and actors have now established a reputation for films which rank among the world's best. The extensive work of all kinds involved in making a film is described in *Producing a Film,* **9**, 246 *et seq.*
Pictures: A Youthful Hero is Coached, **9**, 246
A Full View Inside the Studio, **9**, 247
Outdoor Scenes, real and make-believe (Ship, Iron Foundry, etc.), **9**, 254, 256, 257, 263, 273 275
Actors and Camera-men in action, **9**, 249, 250, 253-255, 258, 259, 269
The Model-Makers at Work, **9**, 251
In the cutting-room, **9**, 260
Among the Models, **9**, 261
Fogmakers at Work, **9**, 264, 265
The Make-up Artist at Work, **9**, 271
The Camera on its " Dolly," **9**, 272
The Finished Film, **9**, 277
See also *The Art of Walt Disney,* **9**, 279

Filter Beds form part of our water works system. They have a concrete base covered first with gravel and then with sea sand, **6**, 244

Financial means having to do with money or finance. A person who runs short of money soon finds himself in financial difficulties.

Financier. One skilled in money matters, especially of those conducted on a large scale When a new company is being formed the promoters of it often call in the help of financiers to raise the money needed, as such men have the control of large sums of money.

Finch, Captain George, was one of the climbers in a Mount Everest Expedition, **2**, 389

Finch. Name given to a tribe of birds all of which are songsters. There are at least 500 varieties of finch Some finches hop on the ground and others run.
House sparrows and canaries are included with the finches

Findhorn is a river of Northern Scotland, about seventy miles in length. It flows into Moray Firth.

Fingal. Another name for Finn Mac Cool (*q.v.*)

Fingal's Cave is named after Finn Mac Cool (*q.v.*) and is to be seen on the Island of Staffa, one of the Inner Hebrides It has rock pillars like those of the Giant's Causeway, **3**, 139 and 146
Picture: **3**, 138

Finger Prints are an infallible means of identification, **9**, 330
Picture " Tell-Tale Marks," **9**, 331

Finland is a republic of northern Europe and a country whose main industry is timber and wood-pulp for paper-making. Agriculture is a major occupation. Helsinki is the capital and the population numbers over 3,800,000. In recent years, as a result of war, Finland has had to cede certain of her northern territory to Russia, **4**, 48 *et seq.*, 358
Pictures: In the Capital of Finland, **4**, 48
A Family Re-union in Finland, **4**, 49
The Surging Rapids of Mighty Imatra, **4**, 49
In Finnish Lapland, **4**, 51
Lorries for Finland, **4**, 347
Timber for Britain, **4**, 351

Finnan Haddock. The fish when it has been split and smoked. The name comes from a Scottish fishing-village, Findon, sometimes spelt and often pronounced Finnan.

Finn Mac Cool is the name of a great Gaelic warrior hero who appears in the folk-lore of both Scotland and Ireland His name is linked with Fingal's Cave in Scotland and the Giant's Causeway in Ireland
Pictures The Cave of a Warrior Hero, **3**, 137
The Giant's Causeway, **3**, 140

Finse, the highest point on the Oslo-Bergen Railway. It is a great skiing centre of Norway, **4**, 36
Picture **4**, 35

Fiord. Another way of spelling Fjord (*q.v.*).

Fir. A coniferous tree which may reach a height of 200 ft Its needle-like leaves are slender and not borne in bunches as are those of the pine Chief varieties, silver fir, Douglas fir and spruce fir. (*p.h.*)
Picture: **1**, 413

Fire. Probably the greatest discovery of all time was that made by primitive man when he found how to produce fire. What fire is, about fire-worship, heat waves, how heat is harnessed, **5**, 85 *et seq* See also *With the Firefighters,* **6**, 253 *et seq*
Pictures How Primitive Man Made Fire, **5**, 85
Secrets of the Greenhouse, **5**, 86
How Work Changes into Heat, **5**, 87
Giant Heat in a Prison, **5**, 88
Experiments in Heat Conducting, **5**, 89
Iron is a Good Conductor, **5**, 90
If Coal could Burn in the Skies, **5**, 91
Falling Water Turned to Heat, **5**, 93
For Cutting Through Solid Steel, **5**, 94
Fighting Oil Fires in Harbours, **9**, 409
A Fire Tower in the Forest **10**, 139

Fire Ant. A much-dreaded creature of South America, **2**, 341

Fireballs is the name given to the largest type of *meteors,* (*q.v.*)

Fire Brigade. See *Fire Service*

Fireclay is a clay able to stand intense heat without fusing or crumbling The best fireclays consist of alumina and silica Bricks made of this material are used for lining stoves, ovens, furnaces and chimneys, and slabs are at the back of most fireplaces

Fire Engines were known as long ago as 1774. Modern engines are petrol-driven and carry an escape ladder, **5**, 181

Fireflies are insects of South America, the West Indies and other countries They differ from glow-worms, their light coming from two rounded spots on their bodies, **5**, 108

Fire-Float is the name given to a floating fire engine as used for fighting fires in docks and riverside warehouses
Picture. **6**, 258

Fireman's Lift. A method by which firemen are trained to carry a person who is unconscious.
Picture: **6**, 259

Fire Service. The prevention and the fighting of outbreaks of fire threatening life and property is one of our public services now under the control

of county and county borough councils. A history of this work and of the men who fight the fires is given in the section *With the Firefighters*, 6, 253 *et seq.*
Pictures: When the Fire Brigades Face Heavy Odds, 6, 253
With the Firemen in Training, 6, 255
A Cool Head for Hot Work, 6, 256
A Self-Propelled Pump with Ladders, 6, 257
The Floating Fire Engine, 6, 258
How the Firemen Learn and Work, 6, 259
For Fighting Fires at our Airports, 6, 260

Fire Thorn is the name given to the shrub pyracanthus lalandei.

Fireworks. The art of making fireworks was known to the Chinese long centuries ago and they were probably introduced into Europe from the East about the time of the Crusades in the thirteenth century. Richard I used a type of fireworks, known as Greek Fire, in his sea fights.
Fireworks displays became popular in the eighteenth century and a great display was given in St. James's Park in 1749 to celebrate the signing of a peace treaty. During the nineteenth century great advances were made and wonderful displays held. In London and elsewhere in Britain there were special fireworks displays in 1919 to celebrate Peace Day and other great displays were given after the 1939-45 war in celebration of the victory.

Firing Pottery, when this work is taken up as a handcraft, consists of making a wood fire and placing the pot in the hot ashes, 8, 404

Firmament means the sky; the heavens. Many centuries ago it was believed that the stars were fixed in a layer, as it were, of the heavens.
This layer was called the firmament. Greater knowledge has altered our ideas about the universe, but we retain the word.

Firozabad was the name given to the old city of Delhi in India, 3, 332

First Aid in Accident or Illness. What to do in an emergency, 8, 232 *et seq.*

First Gentleman in Europe. Unofficial title given to George IV (*q.v.*) while he was Prince Regent (1811-20), 2, 208

First Spring Morning. A Child's Poem by Robert Bridges, 9, 104

First Wild Rose, The. A Poem by Enid Blyton, 9, 115

Firth of Forth. Name given to the mouth of the River Forth where it reaches a great width before emptying into the sea, 3, 116

Firth of Lorne is a stretch of water off the Argyllshire coast between the mainland and the south-eastern shore of the island of Mull, 3, 136

Firth of Tay. The broad mouth of the River Tay from Perth to the North Sea, a distance of about twenty-four miles, 3, 114

Fish. One of the sub-kingdoms of the animal world and are defined as cold-blooded vertebrate animals, living in water, and breathing by means of gills.
Fishes are found in all waters, both marine and fresh, and in almost all temperatures. They were the earliest animals to appear on the earth.
The largest living fish is the Whale Shark which attains a length of nearly 50 feet, the smallest is probably the tiny Goby, measuring only 12 mm. Many fish are long-lived and even small Carp have been known to live for nearly a century. Plaice may reach 30 years and the Herring about 20, 1, 12 ; 9, 367. (*p h.*)
Colour Plate: Fish in their natural element, 1, *facing* 204
Special Colour Supplement: British Fresh Water and Salt Water Fishes, 8, *between* 256 and 257

Fish, Coral. A fish which is at home in the neighbourhood of coral reefs.
Photo-tone Supplement: 1, *between* 336 and 337

Fish, Fossils of. The remains of finny creatures who had their being many hundreds of years ago.
Picture: 1, 2

Fish in Armour. Prehistoric creatures with bony plates and spines, 1, 14

Fishing, as a sport and recreation. See *Angling.*

Fishing, Big Game. This has become popular in recent years in America and Australia, and has spread to Europe. Tunny is one of the principal fishes, and specimens weighing 800 lb. have been caught off the Yorkshire coast, 8, 258

Fish-Lizards. Name given to ichthyosaurs (*q.v.*)

Fish, Prehistoric. Some strange creatures of earth's earliest days, 1, 12 *et seq.*
Pictures: Pterichthys, 1, 14
Ichthyosaurs, 1, 15

Fish That Climb. Denizens of the water that can ascend walls and even trees, 1, 213

Fish with Wings. Prehistoric creatures which used their so-called wings as weapons of defence, 1, 15

Fishguard is a town and seaport of Pembrokeshire. It maintains a regular steamer service with ports in Eire. It was the scene of the last attempted landing of enemy forces in Gt. Britain, 3, 152

Fishing Fleets. About British fishing fleets, how they carry out their work and the harvest they obtain from the sea, 8, 71
Pictures: The Drifters Make for Port, 8, 71
Seine-Net Fishing. On the Slab, 8, 72
Fish-Quay at Great Yarmouth, 8, 73
Mending Their Nets, 8, 74
The Harvest of the Seas, 8, 75
Packing Oysters for Market, 8, 76
Packing Herrings at the Quayside, 8, 77
Shipping Herrings at Mallaig, 8, 78
Off to the Fishing Grounds, 8, 79
Salmon Fishing in Scotland, 8, 80

Fishing Lines. Name given to the fringe of fine threads with which jellyfish catch their prey, 1, 230
Fish in their Natural Element.
Colour Frontispiece, Vol. 1

Fissure. A deep crack or cleft. A severe earthquake may cause fissures to open in the ground. Persons crossing glaciers and snowfields have to keep a sharp look-out for hidden fissures or crevasses in the ice. Such fissures are caused by movements of the earth or ice; but fissures are sometimes due to contraction while cooling, as in metal castings; or to drying, as in wood and clay.

Fits. First aid methods for convulsions, apoplectic, epileptic and hysterical fits, 8, 241

Fitzgerald, Edward (1809-83). A man of letters whose translation of *Omar Khayyam* made him famous the world over.

Fitzgerald, George Francis (1851-1901), wrote on the possibility of originating wave disturbances in the ether by means of electric forces. His researches paved the way for wireless telegraphy.

Fitzroy, Captain. He commanded H.M.S. *Beagle* during the famous voyage when Darwin was the naturalist, 2, 342

Fiume. A port at the northern end of the Adriatic Sea. It was seized by the Italians after the war of 1914-18, but has now been handed back to Yugoslavia, 4, 156

Five Freedoms. As laid down in the objects of the United Nations Educational, Scientific and Cultural Organisation (UNESCO) these Five Freedoms are. Freedom of movement and of sojourn; freedom of worship of Almighty God; freedom of criticism of man's developed faculties; freedom from molestation; freedom from denial of his right to work, wherever he may be, that he may not be in want.

Five Towns is a name given to the district of North Staffordshire where china, porcelain and earthenware are made. Stoke-on-Trent, Hanley, Burslem, Tunstall and Longton are the Five Towns. Fenton is also included in the "Five Towns" and together they make up the district called the Potteries, 3, 73
Pictures: 3, 73 and 74

Fizeau, Armand Hippolyte Louis (1819-96). Experimented in the investigation of the speed of light and measured the velocity of electricity.

Fjord is the name given to a narrow, rockbound inlet from the sea. Norway has innumerable fjords along its lengthy coastline, 4, 38
Pictures. Norway's "Seven Sisters," 4, 34
In a Norwegian Fjord, 4, 34
Colour Plate: The Grandeur of a Norwegian Fjord, 4, *facing* 52

Flaccus Quintus Horatius. Son of a released slave, this was the name of the great Roman poet Horace, 7, 122

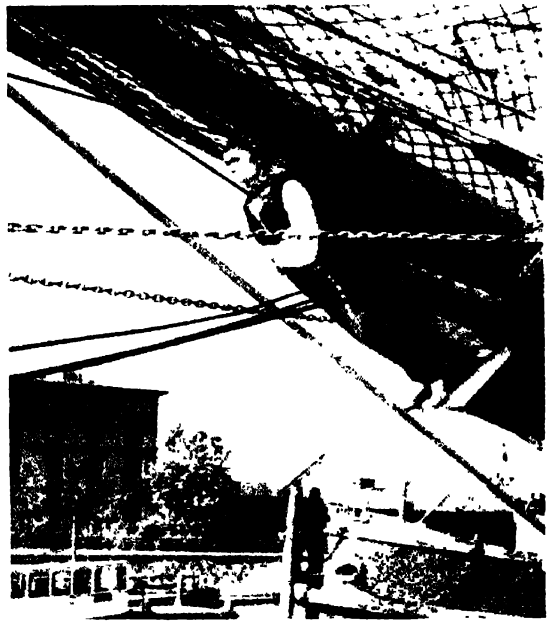
Flag. A piece of material which may be coloured or have some symbol upon it and is flown from a staff or other elevated support. Flags are of ancient origin and in Roman times were used as standards and then later by the knights as guidons attached to their lances.
National flags evolved gradually and the English white flag with the cross of St. George was introduced in the time of Richard I. The oldest national flag is probably that of

PRESERVED FROM THE PAST



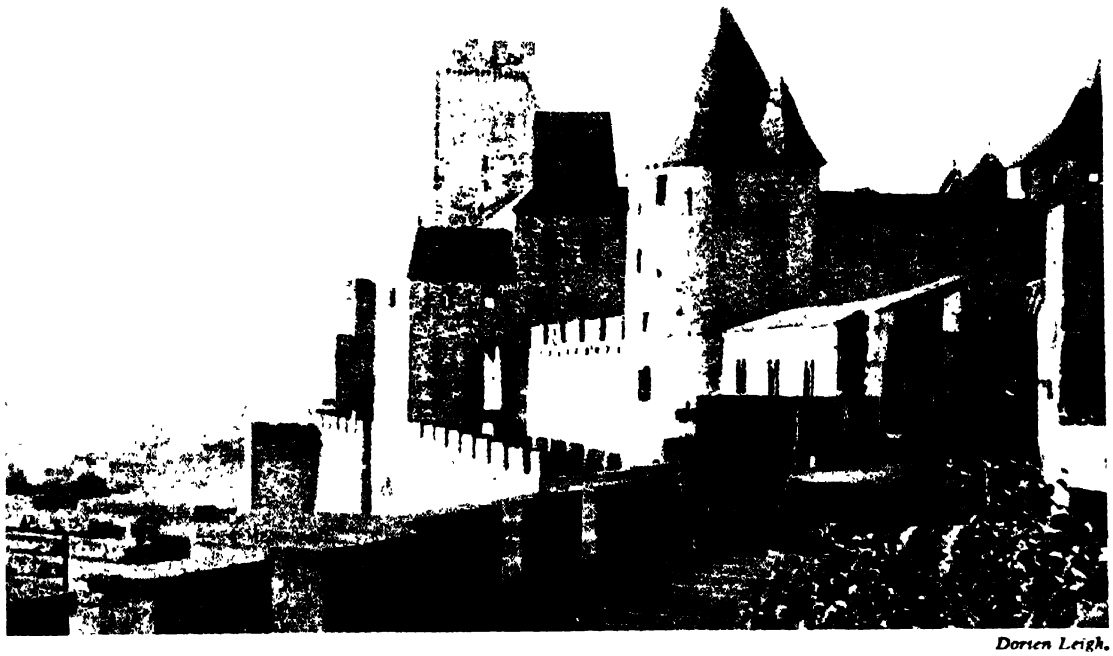
Fox Photos

A *figurehead* (see p. 133) on the prow of a ship originated centuries ago on early war vessels and often served as a ram. Here is the figurehead from H.M.S. *Challenger*, launched in 1851.



Dorien Leigh

This figurehead adorns an old German sailing ship. With the disappearance of sails the figurehead has largely died out, but many are still preserved in naval museums and dockyards



Dorien Leigh.

From the time of the Romans Carcassonne has figured in history as a great *fortress* (see p. 138) and this walled and turreted old city stands to-day much as it was in the Middle Ages. The city guards the narrow gap between the Cevennes and the Pyrenees, and is the capital of the department of Aude in France. These medieval fortifications are the finest in Europe.

Denmark. Most nations now have their national flags, while others such as the White Flag, the flag of truce in war time, as well as the Red Cross Flag are recognised by all nations. The Yellow Flag flown by a ship indicates infectious disease. Many shipping companies have their own special flags.
—Royal Standard, Union Jack, Stars and Stripes, White, Blue and Red Ensigns, **9**, 320
Colour Plates: Some Ensigns of Britain and the Commonwealth, **3**, *facing* 385
Some National Flags, **4**, *facing* 293
Ships' Funnels and House Flags, **5**, *facing* 257
Nelson's Famous Signal Before Trafalgar, **8**, *facing* 45
Some Old Time British Flags, **9**, *facing* 317

Flag is a name given to the common bearded iris plant. See *Iris*.

Flagellates are minute creatures found in the sea. They are able to swim and form the food of many fish, **8**, 72

Flagellum. The flexible part of an insect's antenna; a whiplike structure by means of which some tiny creatures propel themselves through the water.

Flag Pole. A pole weighing over 45 tons and 246 ft. in length was cut from a Douglas pine in Oregon, U.S.A., **1**, 330

Flail. An implement for the threshing of corn. It is formed of two parts, hinged in the middle, and has been in use for many centuries.
See *Implements*.

Flamborough Head is a promontory of the Yorkshire coast south of Scarborough

Flamingo. Long-legged bird with rose-coloured plumage, found in many districts of Africa. Flamingoes can both wade and swim.
Picture: **1**, 200

Flaminius. A consul of the Romans who fought against Hannibal, **2**, 66

Flammarion, Camille (1842–1925) A French astronomer who made important discoveries among the stars

Flamsteed, John (1646–1719) A noted English astronomer, and the first Astronomer-Royal, being appointed to this position by Charles II in 1675, **2**, 170

Flan. Word used to describe an open fruit tart.

Flanders is the name given to a part of Belgium consisting of West Flanders and East Flanders. Bruges is the capital of the former, **4**, 24

Flange. A projection or ridge on a metal casting, wheel, etc. The flanges on the wheels of railway carriages prevent them leaving the rails. Metal pipes have flanges on the ends so that they may be bolted together. The flanges at the top and bottom of a steel girder give it strength.

Flannel, as used for articles of clothing and blankets, is a cloth made from wool. It is the best substance to wear next to the skin especially during the winter months.

Flasher is the name given to an electrically driven switching device which makes animated electrical street signs possible, **6**, 163

Flateyarbok. This was the title of a book written by John Thorharson, a priest of Iceland, dealing with the early voyages of the Norsemen. He told how a Viking ship had reached Labrador in the year 1100, **2**, 273

Flatfish. This family includes plaice, turbot, sole and halibut, **1**, 220
Picture: **1**, 221

Flatford, Suffolk, is on the Stour and is famous for its mill which was painted by John Constable.
Pictures: Immortalised by an English Painter, **3**, 62
Flatford Mill, **7**, 87

Flat-pressing is the term applied to the making of plates and dishes in a china works, **9**, 196

Flaubert, Gustave (1821–80). Famous French novelist and short story writer. His masterpiece, *Madame Bovary*, was published in 1857, and *Salammbo*, which gained for him the Legion of Honour, was first published in 1862. His technical skill had a great influence on other writers, **4**, 16

Flax is a plant with straight stems about 18 in. long the fibres of which are the source of thread for making linen, damask and other fabrics.
—poison which affects some flax-spinners, **1**, 348
— flax-growing in Ireland, **3**, 146 *et seq*
Picture: The Harvest of Flax, **3**, 149

Flaxman, John (1755–1826) Famous for his exquisite designs of English pottery, he was also a talented sculptor.

Flea. A type of small wingless insect of which there are several varieties Its jaws form a piercing instrument and the insect feeds by sucking the blood of other animals

Fleabane is a familiar wild plant having hairy leaves. Its yellow daisy-like flowers are formed in clusters.

Fledgling. A young bird which has just grown its feathers, and is ready to leave the nest.

Fleece is the name given to the wool taken from a sheep at shearing time, **6**, 386

Fleet Air Arm. An arm of the Royal Navy the men of which maintain flying services. The Service is now known as Naval Aviation, **5**, 218 *et seq*

Fleet Street. London street running from Temple Bar eastwards to Ludgate Circus. Here, or in the near neighbourhood, are the offices of the leading British newspapers, **9**, 218
Picture: The Street of Ink, **9**, 212

Fleetwood is a fishing centre, holiday resort and seaside town of Lancashire, near Morecambe. From this port a steamer service connects with Northern Ireland and with the Isle of Man, **3**, 92

Fleming, Sir Alexander (born 1882), Professor of Bacteriology at St. Mary's Hospital, London, was the pioneer in the discovery of Penicillin. He was awarded jointly with Sir Howard Florey and Dr. E. B. Chain the Nobel Prize for Medicine, 1945, **7**, 398
Picture: **7**, 397

Fleming, Sir John Ambrose (1849–1945). A British electrical engineer, he invented and had much to do with the development of wireless thermionic valves, **7**, 374

Fleming, Peter (born 1907). Well-known British travel writer, his books include *News from Tartary* and *A Story to Tell*, **7**, 263, 271
Picture: **7**, 264
Colour Plate: A Desert Caravan Starting at Dawn, **4**, *facing* 204

Flemish is one of the languages spoken in Belgium. It is akin to Dutch, **4**, 23

Flemish Giant. A variety of domestic rabbit, one of the largest of its kind, **8**, 322

Flesh-Eating Plants. How they catch and eat their food, **1**, 339

Fletcher, John (1579–1625). Son of a Bishop of London, he became a dramatist and in collaboration with Francis Beaumont (1584–1616) wrote many plays.

Fleur-de-lys. French term meaning flower of the lily, used as a device in heraldry. It has a long history and was used by Anglo-saxon Kings. From the 12th century the device in one form or other was borne on coats-of-arms and was adopted by the Bourbons, the royal family of France. (*p h*)

Flexible means easily bent, pliant. A fishing-rod must be very flexible to prevent sudden strains being put on the line by a hooked fish

Flinders, Matthew (1774–1814). An Australian explorer He accompanied Dr George Bass on his voyage round Tasmania in the sloop *Norfolk*, **3**, 203

Flintshire is a county of North Wales, adjoining Cheshire Its chief rivers are the Dee and the Clwyd The district is famed for its farms and for stock-raising, but has also many industries.
Flint, at the mouth of the Dee, is the county town.

Flittermouse. The name popularly given to a bat, **1**, 138

Float. This part of the angler's equipment is usually made of cork or quill, and there are different types, **8**, 247
Picture **8**, 250

Flood's Head is the name given to the crest of the famous bore in the River Severn, **5**, 28

Flood-Tide is the rising tide, **5**, 27

Florence, an ancient city of Tuscany on the River Arno, is one of the homes of Italian art. It is a great tourist centre, **4**, 149
—its cathedral front was designed by Giotto, **7**, 4
Picture: **4**, 140

Florey, Sir Howard A Rhodes Scholar from Australia, he became Professor of Pathology at Oxford and collaborated with Sir A. Fleming and Dr. E. B. Chain in perfecting Penicillin, **7**, 399

Florida is a state of the U.S.A. jutting out in the form of a peninsula into the Atlantic. It produces oranges, cotton, sugar and tobacco and has extensive fisheries. The capital is Tallahassee, **4**, 294
Pictorial Map: **4**, 291

Florin. A silver coin valued at 2s. At one time there were gold florins, as well as double-florins in silver worth 4s.
Picture: **8**, 301

Flounder. A small flat-fish found in the sea and the lower reaches of rivers.

It is related to the plaice, but is smaller and does not have the orange-coloured spots of the plaice.

Flower. The blossom of a plant; it produces seed which reproduces the same species.
—Parts of a Flower, **1**, 291
—Planning a Flower Garden, **8**, 276
Pictures: Parts of a Flower, **1**, 294
Flower Culture without Soil in Cornwall, **1**, 384
See also under names of different flowers.

Flower, Largest Known, is the *Rafflesia Arnoldi*, found in Sumatra, **9**, 370

Flower-Pots are usually sold under a number which corresponds to the number of pots in a single cast. Thus, with sixties (3 in. in diameter at the top) there are sixty pots in a cast. Thumbs or eighties are 2¼ in. across; forty-eights, 4¼ in.; thirty-twos, 6 in.; twenty-fours, 8¼ in.; sixteens, 9½ in., and so on.

Flowers and Trees was the title of the first coloured film in the *Silly Symphonies* produced by Walt Disney, **9**, 283

Flowers of the Wayside. About the common plants of the country and seashore, **1**, 299
Special Colour Supplement: British Wild Flowers, **1**, *between* 304 and 305

F.L.S. means Fellow of the Linnæan Society, which is concerned with the study of Botany. See *Linnaeus*

Fluorescence. The property which some substances have of glowing with visible light when rays invisible to the eye fall upon them. Fluorescence may be described as a changing of the wavelength of rays. Thus, when the extremely short-wave X-rays fall on a screen coated with a fluorescent substance, such as platino-cyanide of barium, they are converted partly into the longer-wave rays which affect the eye, **6**, 158

Flushing. Dutch port on the island of Walcheren, south of the Rhine estuary. It has services to English ports

Flute. There are various types of this musical instrument. It is a wood-wind instrument and consists of a pipe pierced with lateral holes and blown directly through the mouth-piece without the intervention of a reed. The flute in its latest form is used both as a solo instrument and in the orchestra. The fife, the French *flageolet*, the piccolo and the "penny whistle" belong to the same family. See *Musical Instruments.*

Fly Agaric. A form of fungus with a brilliant scarlet top covered with snow-white warts. It is one of the most dangerous fungi.
Picture: **1**, 361

Fly-catching Plants. See *Nepenthes.*

Fly-fishing is a method of angling often regarded as more "sporting" than any other form. There are three types: the Dry Fly, the Wet Fly Upstream, and the Wet Fly Downstream, **8**, 253

Flying-Boats are large aircraft with the hulls shaped like a boat, enabling the craft to alight on water instead of on land. It may also have floats attached to the wing-tips.
Pictures: A Pioneer and his Float Seaplane, **5**, 192
Seaplane and Flying-Boat, **5**, 201
For Long-distance Passengers and Mails, **5**, 202
The World's Largest Flying-Boat, **5**, 203
A Giant Flying-Boat as Troop Carrier, **5**, 223

Flying Bombs. German pilotless jet planes, carrying heavy explosive charges, did much damage in the closing stages of the World War, **2**, 255; **7**, 400

Flying Buttress. Name given to a masonry support, used in many Gothic churches, **7**, 298
Picture: **7**, 301

Flying Coach was the name given to the earliest stage coaches. They took a fortnight to reach London from Edinburgh, **5**, 36

Flying Dragon. A type of lizard which stretches out broad membranes and then parachutes through the air.

Flying Dutchman is the name given to a spectral ship said to be seen in the waters round the Cape of Good Hope, its appearance foretelling disaster, **3**, 281; **8**, 48, 49, 361
Picture: **8**, 49

Flying Enterprise. Name of an American ship which eventually went down off Land's End, despite heroic efforts by her master, Captain Carlsen, and of the British Admiralty tug sent to her aid, to save the vessel.
Picture **8**, 63

Flying Fish. These creatures swim so fast that when they leap out of the water their velocity carries them through the air for quite a distance, **1**, 212; **9**, 367
Picture: **1**, 216

Flying Flea. Name given to a type of simple aeroplane designed for amateur flying by a French airman, Henri Mignet.

Flying Fox. A species of very large bat found in Australia etc., **8**, 70

Flying Frogs. Found in parts of Asia and Madagascar. Their feet and hands are webbed so that they can leap from tree to tree.

Flying Gurnards. A species of fish that uses its fins as wings. It can leap out of the water for considerable distances.

Flying Lizard. A prehistoric lizard, in appearance like a giant bat, **1**, 24
Picture **1**, 21

Flying Scot, The. This is the name of one of the finest express trains of British railways. It is on the Edinburgh run from London (King's Cross).
Picture **3**, 109

Flying Tailor of Ulm was a man with ambition to fly. He made himself wings and leapt off the city walls—only to fall into the river Danube, **4**, 88 *et seq*

Fly Stitch is a feature of embroidery. The work is only suitable for thick threads, **8**, 413
Picture, **8**, 414

Fly-Trap, Venus's. See *Venus's Fly-Trap.*

F.M. means Field Marshal, the highest rank in the British Army.

fm. means fathom, a measure of 6 ft.

Foal. The young of a mare or she-donkey, **1**, 95

F.O.B. means Free on Board. Goods for dispatch overseas are frequently quoted F.O.B., which means that the seller pays the cost of carriage from his works or warehouse to the ship on which the goods will be dispatched.

Foch, Ferdinand (1851–1929). The greatest of modern French soldiers. From April, 1918, till the end of the First World War, he had supreme command of all the Allied armies in France, **4**, 12. (*p.h.*)

Fodder means food for cattle, horses and sheep, especially hay and straw. Farmers have to provide winter fodder for their animals during the summer.

Fog and Mist are caused mainly by a fall in the temperature of the air to such an extent that it is unable to hold its invisible water vapour without condensation, **5**, 12

Foggia is a district of southern Italy and a centre for sheep-raising. It has a city of the same name as its capital.

Fogs. Why London fogs are black, **9**, 353

Foie Gras. A delicacy prepared from the livers of geese.

Fokker. Type of aeroplane used by the Germans in the War of 1914–18, **5**, 199

Folkestone. Popular Kentish holiday resort. Port for cross-channel steamers to and from Boulogne, **3**, 36
Picture **8**, 103

Folk-song. Outside the realm of music which has been composed and written down by one individual, many simple ballads whose origin is unknown have been handed down from one generation to another. In this country we have folk songs which are known only in different parts—West Country, North Country and so on. In the last half century a large number have been collected by interested musicians, and have been printed. Many have been used as "themes" for more elaborate musical compositions.

Fontainebleau was once a residence of the rulers of France. It is about thirty-seven miles from Paris and has a great Palace, **4**, 12
Picture: **4**, 9

Foochow is a port and city of south-east China on the River Min. It has long been an important trading centre.

Food and how the body deals with it. A physiology section which shows digestion stage by stage, **8**, 219

Food for Bird Visitors. What the different families like best to eat, **1**, 205

Foolscap. Writing paper in sheets measuring 16½ by 13½ in. and folded to make a page measuring 13½ by 8½ in. This size, however, is not always kept to, some foolscap being larger, and some smaller.
The name comes from the water-mark of a fool's cap, originally impressed upon such paper.

Football is believed to have been played as long ago as the third century and was at one time forbidden by law.

Modern history of the game dates from 1863 so far as Association football (" Soccer ") is concerned when the rules were co-ordinated and the Football Association came into being. The game is played between two teams of eleven players and a match lasts for 90 minutes, with a break at half-time for a brief rest after which the players change ends. The Rugby game originated at Rugby School in 1823 but it was not until 1871 that the Rugby Union which governs the amateur game was founded. The Rugby League which governs the professional game was formed in 1895 and then known as the Northern Union. The Rugby Union game has fifteen players on each side, while the professional League game has only thirteen players in each team, **2**, 221; **9**, 226, 401

—ox hides are used for making footballs, **9**, 233

Pictures: Measurements of Our Playing Fields, **9**, 405

For the Soccer Season, **9**, 233

Two of our National Games, **10**, 97

Footprints in Stone. How pre-historic footmarks have been preserved, **1**, 10

Footsteps of the Whites. Name given by N. American Indians to the common plantain, a weed that appears where white men settle, **1**, 338

Picture: **1**, 339

F.O.R. means Free on Rail, *i.e.*, that the seller delivers goods from his warehouse to the railway company, but pays the carriage no further.

Foraminifera, tiny marine animals whose shells accumulated on the floor of the sea, **1**, 8

Foray means a raid; an excursion into somebody else's property with a view to pillaging or stealing food or cattle. The old border forays carried on in the districts immediately north and south of the boundary between England and Scotland are famous in history, and therefore in literature. The word is connected with " forage "—hunting for food for man and beast.

Forbes, Stanhope Alexander (1858–1947). Well-known British artist, he was associated with the New English Art Club, **7**, 111

Forbidden City is one of the five walled cities which comprise Peiping (Pekin), the ancient capital of China, **4**, 243

Pictures: The Hall of Prayer, **4**, 239

Where Emperors Ruled, **4**, 242

Forbidden Land is a name often given to Tibet because until comparatively recently no strangers were admitted, **2**, 388

Force is the name given in the English Lake District to a waterfall, **3**, 89

Fordlandia is the name of a vast experimental rubber estate established by the Ford Industrial Co. on the Tapajoz river of Brazil, **4**, 316

Foreground. The nearest part of a view or landscape; the part of a picture which represents this.

Foreign Legion. Name given to a French regiment or regiments in which men of other nationalities can enlist. Service in peace time is usually in French colonial possessions, **9**, 377

Foreland, North, and Foreland, South. Name of two prominent points or headlands on the coast of Kent. Each has its lighthouse.

Forest is the name given to a large area of land covered with trees.

—what forests mean to man, **1**, 312

—forest fires, **1**, 316

—how forests affect climate and soil, **1**, 320

Forester, C. S. (born 1899). Modern British novelist, he has written particularly of the Royal Navy, including books such as *A Ship of the Line*, *The Ship*, *Captain Hornblower*, and *The Commodore*, **7**, 263

Picture: **7**, 265

Forest of Arden. Name of a district to the north of the River Avon in Warwickshire where there is still a good deal of woodland. It was much loved by William Shakespeare, **3**, 70

Forest of Dean is the name given to a district of Gloucestershire between the Rivers Severn and Wye. It is one of our English coalfields, **3**, 75

Forest Rangers are employed in Canada to fight pests, prevent waste and guard against fires, **3**, 167

Forestry. The art and science of planting trees on a large scale, and of the management of tracts of forest. Owing to the rapid decrease in the area of the world's natural forests, due to wars and other causes, good forestry is becoming of greater importance every year. The Forestry Commission was set up in 1919 to promote the planting of trees and production of timber in the United Kingdom, **1**, 326

Forfar is the county town of Angus, Scotland. It is interested in jute and linen. Not far distant is Glamis Castle, the home of the Queen Mother in her youth, **2**, 246

Forfarshire. See *Angus*.

Forget-me-not. Familiar dwarf-growing perennial border plant. Its family name is *myosotis*, which means mouse's ear, after the shape of the leaves, **1**, 371

Colour Plate: **1**, *between* 304 and 305 (Plate 4)

Forkbeard. See *Sweyn Forkbeard*.

Forked Lightning occurs when the electrical discharge flashes between the earth and the cloud, **5**, 26

Picture: **5**, 18

Form. The lair or resting place of a hare, which does not burrow like a rabbit, **1**, 136

Formaldehyde, which is largely produced from coal, is one of the ingredients of modern plastics, **6**, 369

Formosa, or Taiwan, is an island in the China Sea. It became Japanese in 1895, but was returned to China after the war. The Chinese Nationalists fled to Formosa after their defeat by the Chinese Communist forces, and the island became the chief centre of Nationalist resistance, **4**, 250

Forres is a town of Moray, Scotland. It has a thriving woollen industry.

Forrest, John (Lord Forrest) (1847–1918). An Australian statesman who became Premier of Western Australia and worked with C. Y. O'Connor to bring about the scheme for pumping water across the desert to Kalgoorlie, **3**, 220

Forster, E. M. (born 1879). Well-known British novelist, he wrote *A Passage to India*, *A Room With a View* and *Howard's End*, **7**, 261

Forster, John (1812–76). British historian. Among the biographies he wrote was one of Charles Dickens.

Forsyte Saga. Name of a set of novels written by John Galsworthy, **7**, 250

Forsythia. Name of a March-flowering shrub with bright yellow bells.

Fort Augustus. A Scottish town in Inverness-shire, on the Caledonian Canal.

Fort Charles was an early trading post set up by the Hudson Bay Company in North America.

Picture: **4**, 341

Fort Frederick, built at Port Elizabeth in Cape Province (Union of South Africa) in 1799, is said to be the oldest British building in Africa south of the Equator.

Picture: **3**, 280

Fort Garry was the original name of the settlement that grew into the city of Winnipeg.

Forth and Clyde Canal is a narrow waterway between these two great estuaries, **3**, 122

Fort Hare Native College is at Alice, a town in the Cape Province, Union of South Africa. It provides advanced education for the Bantu people.

Pictures: **3**, 287

Forth. A river of Scotland. Rising near Ben Lomond, it flows into the Firth of Forth (*q.v.*), **3**, 115

Forth Bridge. This famous bridge spans the Firth of Forth, carrying the railway across the estuary. It is a cantilever bridge a little over a mile and a half long. It took seven years to build, **3**, 120

Pictures: **5**, 44, 129

Photo-tone Supplement: Bridges Big and Little, **5**, *between* 65 and 66

Fort Nelson is a town of British Columbia, on the Alcan Highway, **3**, 197

Fortress. A name often given to the home of a mole because of its intricate construction, **1**, 130

Fortress. A castle or other building or large walled space, made specially strong to serve as a military position, able to offer strong resistance to enemy attack. Fortresses of different types have been used in all military operations from early times. (*p.h.*)

Picture: **10**, 135

Fort St. John, on the Peace River, is a town of British Columbia through which the Alcan Highway passes, **3**, 197

Fort St. Nicholas is an old castle built to protect the harbour of Rhodes in the Mediterranean.

Picture: **4**, 159

Fort Victoria is a town of Southern Rhodesia, a railway terminus. Near by are the ruins of Zimbabwe, **3**, 300

Fort William. A town of Inverness-shire, Scotland, and a popular touring centre. It has large aluminium works, **3**, 128

Pictures: Banavie Bridge, **3**, 127

General Wade's Bridge, **3**, 127

The Laggan Dam, **3**, 128

Fort William was built in 1702 on the banks of the Hugli River by the

A FIRE TOWER IN THE FOREST



Australian Geographical Society.

Fire (see p 133) is one of mankind's greatest blessings, and at the same time one of his most destructive enemies. Uncontrolled, it becomes a devouring monster, and a great forest fire is a devastating calamity against which man is powerless In the vast forestlands of Western Australia various precautions are taken especially to locate an outbreak before it has time to get beyond control. In this photograph is seen a fire look-out cabin, built 200 ft. from the ground on a lopped karri (Gloucester) tree. Daring feats of climbing and axemanship are performed in establishing these look-outs.

British. It was from this beginning that the city of Calcutta grew, 3, 347
Fort William is a grain loading port of Ontario on the north-western shore of Lake Superior, 3, 178
"Forty-Five," The. The name given to the Jacobite rebellion of 1745 which was unsuccessfully led by the Young Pretender, Prince Charles Edward Stuart (*q.v.*), 2, 181 *et seq.*
Picture: Rebel Hunting After Culloden, 2, 183
Forum. An open space or market place in the towns of ancient Rome where business was carried on, 2, 55; 4, 152
Pictures: Ruins of the "Eternal City," 4, 142
Forum of Augustus at Rome, 4, 143
Special Colour Supplement. In Ancient Rome, 7, *between* 336 and 337
Fos, in the Norwegian language, means a waterfall, 4, 34
Fossil Bones. How the remains of prehistoric creatures are unearthed and reconstructed, 1, 27
Pictures 1, 29, 30
Fossilise means to cause to become a fossil. By a fossil is meant any remains or trace of a once-living creature or plant entombed in the earth or rocks long ages ago.
In some cases the original creature or plant has been entirely replaced by silica or petrified fossil.
Fossils, remains of animals, birds, fish and other creatures, and of vegetables found embedded in the strata of the earth, 1, 11
—what they teach us, 1, 46
Pictures: Fossils of Fish, 1, 2
Fossils of Tiny Marine Creatures, 1, 11
Fotheringhay. A small Northamptonshire town, not far from Oundle. It was here, in the castle, that Mary, Queen of Scots, was imprisoned and executed (1587), 2, 152
Picture: 2, 150
Foucault, Jean Bertrand Léon (1819–68) Obtained direct measurement of the velocity of light. A French physicist, he invented the gyroscope.
Foundry. A building in which metals are cast in moulds The metal is heated and, when molten or liquid, poured into the different moulds or shapes required. This process is called casting the metal.
A man skilled in this art is called a founder. See *Out of the Fiery Furnace,* 6, 77 *et seq.*
Fountains Abbey, near Ripon in Yorkshire, is one of the most beautiful ruined monuments in England It stands in the valley of the River Skeld and was a Cistercian abbey.
Photo-tone Supplement: Renowned in Romance and History, 2, *between* 128 and 129
Fountain Shell. Name given to a large mollusc found in the West Indies. It progresses over the ground in a series of jerks or jumps.
Four Ducks. A Poem by William Allingham, 9, 114
Four-Eyed Fish. Fish having divided eyes so that they can see above and below water, 1, 226
Four Horses of the Apocalypse were ridden by Conquest, War, Famine and Death. See *Revelations,* vi, 2–8, 7, 31
Picture: 7, 33
Four-Wheeler. Name commonly given to the horse-drawn four-wheeled cab of former days. With the hansom it gradually disappeared from the streets as the taxi-cab replaced it. See *Vehicles.*
Foveaux Strait is the strip of water separating South Island, New Zealand, from Stewart Island, 3, 274
Fowey is a Cornish yachting resort and market town of Cornwall at the mouth of Fowey River. It sends away much china clay. The "Troy Town" of Sir Arthur Quiller-Couch who lived and died here, 3, 44
Picture: A Cornish China Clay Pit, 9, 197
Fowls. See *Poultry.*
Fox was the name of the ship commanded by Captain McClintock in Lady Franklin's expedition of 1857, 2, 303
Fox. Often known as Reynard and may be described as a beautiful wild dog, 1, 84
Pictures: Dog Fox, 1, 86
Fox Cub, 1, 59, 85
Fox and the Crow, The. A Tale from Æsop, 5, 325
Fox, Charles James (1749–1806). British statesman who supported the American colonists during the War of Independence and is best remembered as leader of the opposition against Pitt. A vigorous opponent of the war with France, for the greater part of his career he was among the opposition, 2, 210
Fox, George (1624–91). A Leicestershire man, he founded the Society of Friends, commonly known as Quakers, a name first applied to Fox and his followers. His "Journal" appeared in 1694.
Fox Who Lacked a Tail, A. A Fable from Æsop, 5, 324
Foxglove. Familiar biennial plant. Its family name is Digitalis, 1, 300
—used as a heart stimulant, 1, 333
—the leaves are poisonous, 8, 244
Foxhound. Well-known breed of dog. The animals are true hounds and are used for hunting the fox. They are almost tireless.
Picture: 10, 111
Foxtail Grass. Common grass whose flower head makes a bushy top to the stem, 1, 302
Foyers, Falls of. See *Falls of Foyers.*
Fra Angelico. See *Angelico, Fra.*
Fracture is the term used when a bone is cracked or broken. In such cases, as a first aid measure, a doctor should be sent for and an ambulance or other conveyance procured if the patient is unable to walk.
Often a splint must be made from a walking-stick, umbrella, or even rolled newspapers to give rigid support to the injured limb, 8, 241
Pictures: Fractures of: Leg Bone; Knee-Cap; Right Collar-Bone and Upper Arm. How to Splint and Bandage, 8, 243
Fragohard, Jean Honoré (1732–1806). A pupil of Boucher, he too became a great French artist. His work mirrors the times in which he lived, 4, 16; 7, 67
Picture: 7, 67
Fram. Name of a ship famous in Polar exploration, 2, 356
Pictures: The Fram—Farthest North and Farthest South, 2, 355
At Supper in the Fram, 2, 356
Sunday Afternoon on the Fram, 2, 357
A Ship of the Antarctic, 2, 371
Frame is the name given by postal sorters to the fitment into which they sort letters. A frame has forty-eight pigeon-holes, 6, 280
Picture: 6, 279
Frame Knitting. See *Knitting, Frame.*
Frampton, Sir George James (1866–1928). A famous British sculptor, he designed the statue of the children's hero, Peter Pan, in Kensington Gardens, London.
Picture: 3, 24
France is a large country of Western Europe and our nearest Continental neighbour. Its chief rivers are the Seine, Loire, Garonne, and Rhone, and Mont Blanc, its highest mountain, is also the highest in Europe (15,780 ft.).
Agriculture is the main industry, but France has vast commercial interests and many heavy industry centres. Paris is the capital and the country has a population of more than 40 millions France has territories and interests outside her European frontiers and these are grouped in what is now known as the French Union (*q.v.*)
For the story of France, see *France,* 4, 5 *et seq.*
—The French Mediterranean, 4, 148
—France's trade with Britain, 4, 350
Pictures: The Coast at Fécamp, 4, 1
The Place de l'Opéra, Paris, 4, 5
The Heart of Paris, 4, 6
Notre Dame de Paris, 4, 7
A Massive "Arch of Triumph," 4, 8
Where History has been Written, 4, 9
A United Nations Meeting-Place, 4, 11
A Parisian Café, 4, 12
The Château of Langeais, 4, 13
St. Michel d'Aiguilhe, 4, 14
St. Malo, 4, 14
Vineyards of France, 4, 15
Washing Day at Annecy, 4, 16
Towers and Battlements, 4, 17
A Famous Place of Pilgrimage, 4, 18
Along the French Riviera, 4, 138
Wine in the "Making," 4, 351
Photo-tone Supplement On the Seine and the Rhone, 4, *between* 112 and 113
Colour Plate Mont Saint Michel, 4, *Frontispiece.*
France, Anatole (1844–1924). The pen-name of Jacques Antoine Anatole Thibault. Great French writer He was awarded the Nobel Prize in 1921.
Francis I. He was King of France from 1515 until his death in 1547 at the age of fifty-three. In the wars of his reign, he preserved French independence, but there was religious persecution and royal extravagance The Château D'If was built by his orders, 4, 7
Picture: 4, 17
Francis Ferdinand of Austria-Hungary, Archduke, was heir to the Emperor. His assassination was the spark from which sprang the war of 1914 18, 2, 233
Francis Joseph (1830–1916). The last Emperor of Austria, he reigned for sixty-eight years, 4, 90

Franck, Cesar (1822-90). A French musical composer, he modelled his work on the German tradition, **7,** 188

Franco, General (born 1892) is *Caudillo* (Leader) of Spain and possesses the powers of a dictator. He reached this powerful position as a result of his victory in the Spanish Civil War (1936–39), **2,** 245

Franco-German War (1870–71) resulted in the defeat of France and the creation of a united Germany with William, King of Prussia, becoming the Kaiser, or Emperor of Germany. In France, Emperor Napoleon III was overthrown and a republic was proclaimed, **2,** 412; **4,** 76

Frankfort, a centre for cattle, horses and agricultural produce, is capital of the State of Kentucky, U.S.A.

Frankfort-on-Main is a town of Germany, a great commercial, industrial and transport centre. It was the birthplace (1749) of Goethe, **4,** 79
Picture: **4,** 73

Frankland, Sir Edward (1825–99). Began life as a chemist's assistant in Lancaster. With Lockyer, discovered helium in 1868.

Franklin, Benjamin (1706–90). A brilliant American, he was an early experimenter with electricity. Discovered the Gulf Stream and helped to draw up the Declaration of Independence, **7,** 368

Franklin, Sir John (1786 1847). Famous British explorer, he became Governor of Tasmania. He commanded an expedition to discover the North-West Passage, **2,** 301
Pictures. The North-West Passage, **2,** 219
Setting Off for Australia, **2,** 302
Taking Their Boat with Them, **2,** 303

Franklin, Lady. In 1857, she fitted out an expedition to explore the North-West Passage, a task which had previously brought her husband to his death (1847), **2,** 303

Franks. A Germanic tribe who settled in north-east France after the fall of the Roman Empire. They were the strongest of the tribes and conquered territory as far south as the River Loire, **4,** 6

Franz Ferdinand, Archduke. See *Francis Ferdinand of Austria-Hungary.*

Franz Josef Glacier is to be found in the South Island of New Zealand.
Pictures: The Franz Josef Glacier, **3,** 267, 268

Franz Josef Land is in the Arctic regions, east of Spitsbergen, **2,** 357

Fraserburgh is a seaport and fishing town of Aberdeenshire and is an important centre of the Scottish herring fishery.
Picture: **3,** 123

Fraunhofer, Joseph von (1787–1826). A Bavarian optician, he discovered the dark lines in the spectrum now known by his name.

Fray Bentos. A port of Uruguay on the Uruguay River. It is a noted meat-packing and exporting centre, **4,** 393

F.R.C.P. means Fellow of the Royal College of Physicians.

Fredericton, standing on the St. John River, is capital of the Canadian Province of New Brunswick.

Frederiksborg is the name of a famous Danish castle, **4,** 47

Frederick the Great. See *Frederick William II.*

Frederick William I was King of Prussia from 1713 until 1740. Under his rule, Prussia rose to be the third military power in Europe with an Army that was the best in training and equipment of its time, **4,** 75

Frederick William II (1712–1786) was King of Prussia from 1740 until 1786 and was known as Frederick the Great. He won Silesia from Queen Maria Theresa of Austria, **4,** 76

Freedom of the City is an honour which may be acquired by citizens under certain regulations. In London the Freedom can be obtained by Redemption or by Patrimony or Servitude, according to ancient custom.
The Freedom of the City of London (and of other cities as well) is also conferred by Presentation as a mark of high distinction for great services to the Country, Empire, or World, by subjects of the Crown. The Honorary Freedom may be given to distinguished foreign personages though their names cannot be entered on the Roll of Freemen.
The Freedom confers no special privileges but is highly regarded as an honour.
Picture: The Freedom of the City, **9,** 63

Freehold is a term applied to a property or estate held in "fee simple," which is in the absolute ownership of the holder, to be disposed of at his free will.

Free Men. Another name for the Germanic tribe known as the Franks (*q.v.*).

Freetown is the capital of the colony and protectorate of Sierra Leone in British West Africa and is an important harbour and naval base, **3,** 380, 383

Fremantle, on the Swan River, is the outport for Perth, capital of Western Australia, **3,** 219
Pictorial Map: **3,** 242

Fremantle, Captain Sir Charles (1800–69). He reached the coast of New Holland (Western Australia) in 1829 and took possession of it in the name of Britain. His name is remembered in the modern Western Australian port of Fremantle, **3,** 204, 219

French, Sir John. See *Ypres, Earl.*

French Chalk. See *Steatite.*

French Guiana. See *Guiana, French.*

French Guinea. See *West Africa, French.*

French Horn. See *Horn.*

French Knots, wired with double thread, are a feature of embroidery. They are used as centres for flowers and for fastening down a hem, **8,** 413
Picture: **8,** 414

French Resistance Movement. In countries occupied by Germany during the Second World War, patriots fought on in their secret groups which were thus known as Resistance Movements and were in certain countries—France especially—highly organised, **2,** 255; **4,** 10

French Revolution is the name given to the tremendous upheaval in France which began in May 1789 and ended, after several years of bitter strife and bloodshed, in October 1795. The King, Louis XVI, and his wife, Marie Antoinette, with many members of the aristocracy as well as their supporters, were executed during this period. The motto of the Revolutionaries was Liberty, Equality, Fraternity.
Despite its excesses the Revolution brought about the recognition of certain fundamental rights of all people, rich or poor, throughout the civilised world, **2,** 196, 410
Picture: Storming the Bastille, **2,** 413

French Riviera is the name given to the French Mediterranean coastland which includes such towns as Cannes, Antibes, Nice, and Mentone, **4,** 13

French Seam is a method used in plain needlework for joining pieces of material with their edges meeting, **8,** 410
Pictures. The First Part of a French Seam, **8,** 409
The Finished French Seam, **8,** 409

French Somaliland. See *Somaliland, French.*

French Sudan. See *West Africa, French.*

French Union. This was formed in 1946 and consists of Metropolitan France (see under *France*), the overseas departments and territories, and states which are associated with France. French overseas departments and territories comprise: Algeria, Martinique; Guadeloupe, Reunion; French Guiana; French West Africa (which consists of the territories of Senegal, French Guinea, the Ivory Coast, Dahomey, French Sudan, Mauritania, Niger, and Upper Volta); French Equatorial Africa; Madagascar; Comoro Archipelago; French Somaliland; New Caledonia, French settlements in India, French settlements in the Eastern Pacific; St. Pierre and Miquelon. The associated states consists of the protectorates of Morocco and Tunisia, and the Federation of Indo-China (which includes the Republic of Viet-Nam). All these are mentioned separately in this index. In addition, the French Union has certain trusteeship territories, **4,** 18

French West Africa. See *West Africa, French.*

Fresco. A painting done in water colours on the plaster of a wall. The plaster must be damp, so that the colours may sink into it.
Many of the old frescoes were painted on fresh plaster that had not yet dried out, and that was how this kind of decoration got its name, **7,** 2

Freshwater. A seaside town of the Isle of Wight. A favourite home of Lord Tennyson was in this district.

Freshwater is a famous bathing-beach of Sydney, Australia, **3,** 231

Freud (*pron.* Froid), Sigmund (1856–1939). Born in Moravia but lived in Vienna from 1860 to 1938 when he came to London. He developed his theories on which psychoanalysis is based. These have been expounded in his different books: *The Interpretation of Dreams, The Psychopathology of Everyday Life, Civilisation and Its Discontents.* His works have had considerable influence in the modern treatment of nervous and neurotic patients.

Freudenstadt is a winter sports and health resort in the Black Forest region of Germany. Its name means "town of joy," **4**, 87

F.R.G.S. means Fellow of the Royal Geographical Society.

F.R.Hist.S. means Fellow of the Royal Historical Society.

F.R.H.S. means Fellow of the Royal Horticultural Society.

Friars were mendicant or begging orders of clergy founded in the Middle Ages, **9**, 324

Friar's Heel is the name given to one of the massive columns that form *Stonehenge* (*q.v.*).

F.R.I.B.A. means Fellow of the Royal Institute of British Architects.

Friction is the resistance to motion which is set up when one surface is moved over another. The amount of friction depends on the nature of the surfaces, the force pressing them together, the size of the parts touching and the speed of motion.

Friction is always accompanied by heat. That is why we rub our hands to warm them. We say that friction occurs between two persons when they disagree so strongly that their tempers become warmed up, as it were.

Friedrichshafen. A German town standing on Lake Constance, a well-known tourist centre. Here, also, the famous Zeppelin airships were constructed, of which one made a successful round-the-world flight, **9**, 296

Friendly Islands. Another name for the Tonga Islands (*q.v.*).

Friesland is a province of Holland noted especially for its cattle-raising and dairy produce, **4**, 31

Frigate. A type of warship which in the days of sail was next in size to the large ships of the line. The word gradually disappeared when steam came in and was replaced by cruiser. Latterly the word has come into use again for a particular type of light cruiser. (*p.h.*)

Frigate Bird. A sea-bird seldom seen on land except during the breeding season. It lives on fish, which it follows and snatches from the water.

Frigorificos are the establishments of the River Plate ports where meat is frozen for export, **4**, 320

Frilled Lizard. An Australian lizard which attains nearly a yard in length. It is, however, a harmless creature and is found only in sandy places.

Frinton-on-Sea is a residential district and holiday resort on the coast of Essex.

Frith, William Powell (1819–1909). British artist, born in Yorkshire, and became R.A. in 1852. Well-known pictures include "Ramsgate Sands," "The Railway Station," "Derby Day" (National Gallery).

Picture: Reproved by John Knox, **2**, 151

Fritillaria Meleagris. A flowering plant often known as the Snake's Head from its spotted, drooping flowers.

Picture: **1**, 303

Fritillary. Name of a family of flowering plants.

Frobisher, Sir Martin (*c.* 1535–94). A great English navigator, he is famous for his efforts to find the North-West Passage to India, **2**, 146, 295 *et seq.*

Picture: **2**, 296

Froebel system of children's education was evolved and developed by F. A. W. Froebel (1782–1852). It lays great stress on the value of play and the encouragement of the child's natural creativeness.

The main part of Froebel's theories has been put into practice in the kindergarten school. Clay-modelling, paper-folding, mat-plaiting, bead-threading, and similar handwork all help to develop the child's senses. Observation and care of natural objects, animals and flowers also encourage the finer instincts of the child.

Frog. An amphibian, *i.e.*, a creature able to live on land and in the water, **1**, 154. (*p.h.*)

—what is the difference between the frog and the toad? **1**, 156

Pictures: An American Bull-Frog, **1**, 154

The Story of the Frog, **1**, 155 *et seq.*

Frogbit. A plant commonly found in ponds in this country. It hibernates during the winter at the bottom of the water.

Pictures: **1**, 280, 281

Frog, Flying. See *Flying Frog.*

Frogmen. Name given to strong swimmers who were equipped with self-contained breathing apparatus and large webbed rubber shoes in order to carry out dangerous underwater tasks in war-time. In peace time they work in conjunction with ordinary divers in locating or examining wrecks.

These frogmen have increased the possibilities of underwater photography very greatly and have produced remarkable films showing some of the wonders of the deep.

Pictures: Making Movies on the Ocean Bed, **10**, 143

Frogmore, near Windsor, is where Queen Victoria was buried (1901), **2**, 221

Frog-mouthed Owl. A tawny owl found exclusively in Australia. It has a mouth very much like that of a frog.

Frog-Spawn. A mass of frogs' eggs, each egg enclosed in a jelly-like envelope, **1**, 155

Frog, Tree. See *Tree Frog.*

Froissart (*pron.* Frwah-sahr), Jean (1338–1410). A famous French chronicler, he has left picturesque descriptions of medieval life and events of the years 1326–1400 in his famous "Chronicles."

Frome (*pron.* Froom) is a town of Somerset. It has printing works and other industries.

Frond is the term used for that part of ferns which corresponds to leaves in other plants.

On the underside of a fern's fronds are countless spores, which serve the same purpose as seeds.

Frontier. That part of a country which fronts or borders another country or countries. Frontiers are generally strongly guarded by troops, and anyone crossing them has to show his passport.

Frontier, The North-West. See *North-West Frontier.*

Frood is a town of Ontario, Canada. It is famous for the Mond Nickel Mine.

Picture: **6**, 108

Frost. As a weapon of nature. The wonderful power of frost in breaking down rocks and its strength in other ways, **1**, 39

—why is there no frost at night in summer? **9**, 353

Picture: Fighting Frost, **1**, 389

Frost Bite. If your fingers, ears or nose become white and deadened with cold, do not allow them to become warm suddenly. Gently rub the parts with snow or cold water, **8**, 242

Froude, James Anthony (1818–94). English writer. His *History of England* is well known. He was a friend of Carlyle.

F.R.S. means Fellow of the Royal Society.

Fruit. General term for that part of the plant containing the seed. Many fruits are edible, among the best-known being apples, pears, plums, grapes, currants, peaches, oranges, etc. The growing of fruit for food has been carried on for many centuries, and so has the preservation of fruit either in the form of jam by boiling it with sugar or in other ways. The process of preserving fruit in syrup or water in hermetically sealed jars was used by the Romans. The canning of fruit is now a great industry in many countries.

The improvement of fruit and the conquest of pests and diseases is today the subject of scientific study at Horticultural Institutes and Science Colleges.

—The Ways of Nature and of Man, **1**, 369–384

—Science Comes to the Farm, **1**, 385–394

Pictures: Watering Thirsty Orchards, **1**, 392

For Fruit Farmers and Market Gardeners, **1**, 393

Spraying Fruit Trees, **1**, 394

Fruits, Citrous. See *Citrous Fruits.*

Fruits, Dried. See *Dried Fruits.*

Fry, A cluster of small fish not long spawned, **1**, 210

Ft. means one foot, *i.e.*, 12 inches. An abbreviation of the term for the measure.

Fuchsia. Hardy and half-hardy flowering shrubs, first introduced into England from Central America in 1788. Colours are all shades and mixtures of red, white and purple, and the bell-shaped flowers hang downwards (*pron.* fu-shia).

Fuego. A volcano near Antigua, the former capital of Guatemala, **4**, 299

Fuelling Ships, *i.e.*, filling the bunkers with coal, was at one time a dirty, dusty undertaking. Oil-burning vessels are re-fuelled with a minimum of human labour.

Fuerteventura is one of the *Canary Islands* (*q.v.*).

Fugitive. One who flees; a runaway. Fugitives from justice are persons who have fled to escape punishment for crimes committed by them.

A dye is said to be fugitive if it soon fades.

MAKING MOVIES ON THE OCEAN BED



It was in the dark days of the war that the *Frogmen* (see p 142) came into being. Strong, fearless swimmers were fitted with self-contained breathing apparatus and webbed rubber shoes. They made their way underwater to fix explosive charges to enemy ships. In peace-time the Royal Navy has other tasks for the frogmen and here we see one with camera and lighting apparatus.



Crown Copyright.

In this photograph we have one of the shots taken on the sea bed by the frogman-photographer in the first picture. Ordinary divers with standard equipment are too heavily handicapped and their movements stir up the mud, spoiling visibility for photography, and they have other tasks. Photographs of underwater damage to ships have already proved of great value.

Führer. A German word meaning leader and the title used by Adolf Hitler (*q.v.*), **2**, 246. (Also spelt *Fuehrer.*)

Fujiyama is a sacred mountain of Japan. It is 12,365 ft. high, the highest point in Japan, and is the summit of a sleeping volcano, **4**, 250
Picture: **4**, 249
Colour Plate. Fishing near Japan's Sacred Mountain, **4**, *facing* 205

Fukien is a large province in the south-eastern part of China. It is an agricultural district with a dense population and grows tea, cotton, rice and similar crops.
Foochow is the capital.

Fukui. A city of Japan on the island of Honshiu. It was destroyed by an earthquake in 1948, **4**, 250

Fulham is a borough of London on the Middlesex bank of the Thames. It contains Fulham Palace, a seat of the Bishop of London. One of London's biggest gasworks is situated here, **6**, 265

Fulk the Black was a tenth-century Count of Anjou, the ruins of whose castle at Langeais can still be seen, **4**, 13

Fuller, Thomas (1608–61). English clergyman. Best known for his book *Worthies of England.* He was rector of Cranford, Middlesex, and was buried there in the Parish Church.

Fulmar. Name of a sea-bird found in the Hebrides. It belongs to the petrel family and may be 20 in. in length. Sometimes spelt *Fulmer.*

Fulton, Robert (1765–1815). An American inventor, he was father of the steamship. In 1803 a small steamboat of his building was seen on the River Seine in France, and in 1807 he constructed a larger vessel, *Clermont,* in New York, **5**, 119

Fumarole. A hole in the ground through which steam emerges.
Fumaroles are found where there are geysers or natural hot springs, **3**, 260

Fumitory. A wild plant that climbs by means of its leaf-stalks and bears flowers that are rose-coloured with purple tips.

Funchal is the chief town and port of Madeira (*q.v.*). It is a favourite winter resort and the centre of the famous wine industry, **4**, 140

Fundy, Bay of. An inlet from the Atlantic Ocean at the south-eastern tip of Canada. It is noted the world over for its high tides, **5**, 28

Funen. One of the chief islands of Denmark, it stands in the approaches to the Baltic Sea, the Great Belt being on one side and the Little Belt on the other, **4**, 46
Picture: **4**, 47

Fungus. A form of vegetable growth as found in mushrooms, toadstools, moulds, etc. Fungi (plural) and algea make up lichens. Fungi have no chlorophyll (*i.e.*, green colouring matter). When growing on living plants they are parasites, **1**, 358–362

Fur. means a furlong, *i.e.*, one-eighth of a mile.

Fur and Feather Clubs are founded in most parts of the country in the interests of people who keep pets. Most of the clubs have a junior section and arrange novices' classes at their shows, **8**, 310

Furious Overfall, The. This was the name given by the navigator John Davis to the currents between Labrador and Baffin Land, **2**, 296

Furnace, Out of the Fiery. In this section a description is given of the methods employed in making the molten steel into a wide variety of different articles, including machinery of all kinds, bridges, ships, cars, locomotives, etc.
Pictures. At Work in the Rolling Mills, **6**, 70
Making a Steel Casting, **6**, 71
In Margam Abbey Mills, **6**, 74, 75
A 2,000-ton Forging Press, **6**, 78
Under the Steam Hammer, **6**, 79
Drop Forging, **6**, 80
Making Steel Tubes, **6**, 81
Colour Plate: A Blast Furnace in Action, **6**, *facing* 37

Furness is a district of Lancashire, part of it reaching to the English Lake District. Barrow-in-Furness is one of its towns, Furness Abbey being near by.

Furrow is the name given to the space between the ridges during ploughing, **6**, 382

Furse, Charles Wellington (1868–1904). A British painter famous for his pictures of country life and open-air scenes.

Furze. A name sometimes used for the thorny shrub *Gorse* (*q.v.*).

Fusan is a seaport of the southern part of Korea and the nearest point of the Asiatic mainland to Japan. Normally it handles most of Korea's trade.
In recent times it has become more generally known as Pusan, **4**, 250

Fustenella is the name of the kilt-like garment worn by Greek Evzones It came to Greece first from Albania.
Picture: **4**, 154

Fusun, or Fushun, is a coal-producing centre of Liaoning province of China (one of the nine provinces of Manchuria), **4**, 241

Futawarasan Temple is one of the sights of Nikko, Japan, which has many shrines as well as tombs of Emperors.
Picture **4**, 247

Fyleman, Rose. English writer of stories and verses for children.
Poem A Fairy Went A-Marketing, **9**, 114

Fyne, Loch. This is a long and narrow inlet on the coast of Argyll, Scotland, famous for its herring fisheries, **3**, 138

Fyodorov, Eugene, astronomer to the Soviet expedition that wintered at the North Pole, 1937–38.
Picture: **2**, 362

F.Z.S. means Fellow of the Zoological Society.



G IS the seventh letter of our alphabet and of the Latin. It took third place in the Greek alphabet. G is one of the gutturals, that is, the sounds in the utterance of which the throat (Latin, guttur) takes a part.

The letter is pronounced in English in two different ways. In "gentle" it is "soft" and unchecked, having the sound of J; in "gun" and "gimlet" it is "hard," and the breath is arrested. Some words, such as "gnarled," "gnaw," and "resign," contain a G which is not sounded at all.

In music, G is the fifth note in the scale of C major and minor. In atlases G is often used as an abbreviation for Gulf.

Gable. The triangular part of an end of a house, between the level of the eaves and the ridge.

Gabriel was the name of one of the ships of Sir Martin Frobisher, **2**, 295

Gaddi, Taddeo He rebuilt the famous Ponte Vecchio in Florence in 1345.
Picture: **4**, 140

Gadfly. A pest that pierces the skin of reindeer, cattle and similar animals to deposit its eggs, **1**, 104

Gage is the name given to several varieties of plum including the well-known greengage.

Gainsborough is a town of Lincolnshire. It is noted for its agricultural machinery, and for the ægir or bore which appears on the River Trent in the locality
Pictures: On the Evening Tide, **5**, 33
Like a Corrugated Sheet, **5**, 34

Gainsborough, Thomas (1727–88). One of the original members of the Royal Academy and an outstanding English painter "Boy Blue" was one of his masterpieces, **2**, 411; **7**, 78
Picture **7**, 78

Gal. or gall means gallon or gallons.

Gala is the name of a river of Southern Scotland. The town of Galashiels stands on Gala Water, **3**, 112

Galapagos is the name given to a group of islands belonging to Ecuador. They are found to the west of this South American Republic and were surveyed by Darwin, **2**, 346
—the islands have giant tortoises.
Picture **1**, 346

Galashiels is a town of Selkirkshire, Scotland, standing on Gala Water. It is famous for its twills or tweeds, **3**, 112

Galata is the business quarter of Istanbul, the Turkish city on the Bosphorus, **4**, 160

Galatz is a large Rumanian grain and timber port on the River Danube, **4**, 104

Galeka-Kaffir War (1877–78). This was the ninth of the wars which Britain fought against the Kaffirs in South Africa. The Galeka were a tribe of the Kaffirs. They were led by their chief, Kreli, whose flight (together with the death of Sandile, another chief who was his ally) brought the war to an end, **3**, 280

Galen or Claudius Galenus (A.D. 130–200). A Greek physician who became famous for his many wonderful cures He wrote many medical treatises most of which were burnt but some 83 are still extant Galen co-ordinated the medical work of his forerunners. More than any other man he made possible the development of modern medicine, **7**, 379

Galena is the name of one of the ores from which lead is obtained, **6**, 138

Gale warnings. An important part of weather forecasting, **5**, 13, 22

Galicia is the name for a region of central Europe which extends along the frontiers of Poland and Czecho-Slovakia, **4**, 90

Galicia is a district of north-west Spain. Its largest town is the seaport of Corunna, **2**, 348

Galilee is the name of a district of the Holy Land and of a large lake of this country, better known as the Sea of Galilee The River Jordan flows through the lake, **4**, 175, 183

Galileo (1564–1642). This celebrated astronomer was born at Pisa, Italy. He was the first to turn the telescope to astronomical uses, and discovered sunspots and the moons of Jupiter. He was prosecuted by the ecclesiastical authorities because of his belief that the earth travelled round the sun, **8**, 108. (*p h.*)
Pictures Galileo before the Inquisition, **7**, 349
Two of Galileo's Telescopes, **7**, 352

Galle, Johann Gottfried (1812–1910). A famous German astronomer. He discovered the "crape" ring round the planet Saturn, so-called because it has the dull appearance of that material, **8**, 152

Galleon. A Spanish ship of the 15th to 17th centuries, used both for war and for trade with the Indies. They were very large and sometimes had three or four gun decks, but they were not easily handled and manœuvred and, in the case of the Great Armada (1588) the smaller British ships were able to defeat them The name is often used nowadays to describe loosely any large ship. (*p h.*)

Galley. An old type of warship propelled by both oars and sails The Greeks and Romans, and, long after them, the Venetians, Genoese and the Mediterranean pirates, did most of their sea fighting with galleys.
A galley had one or more tiers of oars, each worked by a number of men, who were usually criminals or prisoners of war.

Gall-Flies. Name of very small insects. They attack oak trees and rose bushes so causing the familiar galls or growths.

Gallia, a country much larger than the France of to-day, was the home of the ancient Gauls, **2**, 62
subjugated by Julius Cæsar, **2**, 402; **4**, 5

Gallipoli is a peninsula of Turkey famous for an unsuccessful British campaign in 1915, **2**, 236, **4**, 158

Gall-Nuts are growths on oak trees caused by the work of insects.
Picture: **1**, 333

Galloway is a district in the south-west of Scotland where a great water-power scheme has been developed. There are five hydro-electric power stations.
Pictures: **5**, 67

Galls are swellings that appear on plants. Witches' brooms on certain trees; oak apples; and robin's pincushions on dog roses are forms of gall.

Galsworthy, John (1867–1933). Eng-

lish novelist and playwright. The *Forsyte Saga* is considered to rank among his best work, and among his plays are *Strife*, *Justice*, *Loyalties* and *Old English*, 7, 249

Galton, Sir Francis (1822–1911), was the first to define the anti-cyclone and a great expert in meteorology or weather lore. Showed the value of finger prints in identification. He was the founder of the modern science known as Eugenics (*q.v.*).

Galvani, Luigi (1737–98). Born in Bologna, Italy. He was led by the twitching of the legs of dead frogs when touched by two metals to a theory of animal electricity, 7, 368
Picture: 7, 369

Galvanised. Coated with zinc to prevent rusting. Roofing sheets and many other articles made of steel or iron are galvanised by being dipped in a bath of molten zinc.
The thin outside film of zinc that adheres to them is not itself affected by wet, and protects the metal underneath. The word is derived from the name of Luigi Galvani, an Italian. See *Zinc*, the Galvanising Metal, 6, 121

Galvanometer. An instrument for measuring the strength of electric currents, or detecting their existence. The principal parts of a galvanometer are a coil, through which the current passes, and a permanent magnet.
One of them is so pivoted or suspended that it can move, and has a pointer attached to it. The passage of a current causes the moving part to swing through part of a circle. Named after the Italian electrician, Galvani.

Galvanometer, Reflecting. An appliance with a tiny mirror used for sending telegraphic signals, 5, 100
Picture: 5, 104

Galveston, Texas, is one of the great cotton ports of the U.S.A., 4, 292

Galway. One of the western counties of Eire in the province of Connaught. To the far west lies the district of Connemara. The Shannon is the principal river and the county mountainous. Its interests are mainly agricultural, 3, 150
Galway is the county town. It exports much farm produce.

Gama, Paul da. He was a brother of Vasco da Gama. Died at the Azores, 2, 292

Gama, Vasco da (1469–1524). One of the early Portuguese navigators. He was the first to round the Cape of Good Hope and so reach India, 2, 289 *et seq.*
—he came, on Christmas Day, to the coast-line of Natal, 3, 303
Pictures: Leaving the Tagus, 2, 289
Meeting the Chiefs, 2, 290
On a Homeward Voyage, 2, 292
The "River of Good Tidings," 2, 291
The King of Malindi proves his Friendship, 2, 293

Gambia. A British colony and protectorate in West Africa. Bathurst is the capital and is an air link in the route to South America. Groundnuts are the chief export, 2, 322; 3, 384
Picture: 4, 375

Gambia. A river of West Africa, about 1,000 miles in length flowing into the Atlantic. It was discovered by Portuguese navigators, 2, 286

Game Reserve, Great. This is the name given to the part of Kenya Colony where lions, antelopes, zebras, rhinoceroses and other wild animals can live unmolested.

Gammexane, also known as "666," a new and powerful insecticide, 7, 398

Gander, in Newfoundland, is an important airport on the transatlantic route from the British Isles, 3, 160

Gandhi Wheel is the name given to a primitive Indian appliance for spinning cotton.
Picture: 3, 325

Gandhi, Mohandas Karamchand. Usually known as Mahatma Gandhi. Born in 1869, he studied in England and qualified as a barrister. He returned to his country and became a powerful influence as a leader of the agitation against British rule. The simple way in which he lived and the high personal example he set led to his being regarded almost as a saint by his Hindu followers. He was assassinated in January, 1948, 3, 312

Ganesh is the elephant-headed god of wisdom and good fortune in India, 3, 318

Ganga Mai is an Indian name for the Ganges, the greatest river of India, 3, 354

Ganges is India's most sacred river. It rises in the Himalayas and flows into the Bay of Bengal. Its length is about 1,500 miles and it has on its banks Calcutta, Benares and Cawnpore, 3, 354 *et seq.*
Pictures: The Holy City of Benares, 3, 354
On the River Ganges, Benares, 3, 355
At the Bathing Ghats of Hardwar, 3, 358
The Civic Centre at Cawnpore, 3, 360

Ganglion. A mass of nerve cells in which a number of nerve cells meet. A ganglion may be compared to a small telephone exchange to and from which messages are sent.
Ganglion has the second meaning of a swelling on a tendon.

Gann, Dr., an Englishman who became Medical Officer to the colony of British Honduras and devoted his leisure to exploring the ruins of Maya civilization, 9, 28

Gannet. Known sometimes as the Solan Goose, this is a large white bird, though not a goose. It has a wing-span of more than 6 ft., 1, 201

Ganoid, a shark of a prehistoric type.
Picture: 1, 13

Ganymede was a beautiful Trojan boy who became in the legends cup-bearer to Jupiter, 7, 22

Ganymede is the name given by astronomers to the largest of the four satellites of the planet Jupiter, discovered by Galileo, 8, 151

Garda is the name of a large lake in northern Italy. Its scenery is exquisite.

Gardener, The. A Poem by Robert Louis Stevenson, 9, 87

Garden Flowers Run Wild. How cultivated plants have become wildlings, 1, 338

Gardening for Girls and Boys. A section dealing with an interesting, healthful and profitable hobby for children and older folks, 8, 271 *et seq.*
Pictures: The Young Enthusiasts, 8, 271
Some annual and perennial flowers, 8, 272–276
Bulbs in Fibre, 8, 277
Daffodils and Narcissi, 8, 279

Garden Lime. A preparation of lime for sweetening garden soil and promoting root action. It is useful as an insecticide.

Garden Line. Often used in conjunction with a peg and reel, this is a length of cord for forming straight edges in the garden, drawing drills etc., 8, 274

Garden of Bulgaria is the name given to the fertile lands in the upper reaches of the rivers Striema and Tunja. This is where roses are cultivated to produce the famous "attar of roses," 4, 97

Garden of Eden, of which we read in the Holy Bible, is believed to have been in the lower Tigris-Euphrates Valley in Iraq, 4, 199

Garden of England. A term often applied to the county of Kent and to the Isle of Wight, 3, 33

Garden, Physick. Name given to the plots in old-world gardens where herbs and plants were grown for the making of medicines, 1, 333

Garden Tools. Implements needed for working a garden, 8, 273

Garden Warbler. See *Warblers.*

Gardiens de la Camargue is the name given to the French cowboys who tend the cattle in the Rhone delta, 4, 148

Gare-Fowl. A name given to the Great Auk (*q.v.*)

Gareloch is a loch or lake formed in the Firth of Clyde, Scotland. Upon the coast of the loch are several popular holiday centres.

Gareth and Lynette. A Tale of King Arthur and the Round Table, 5, 387

Garfield, James Abram (1831–81). Fought in the American Civil War. Became President of the United States but was assassinated by a madman.

Gargoyle comes from a French word meaning throat. It is a decorative part of a building and may be designed to carry off rain water.
Pictures: 7, 308

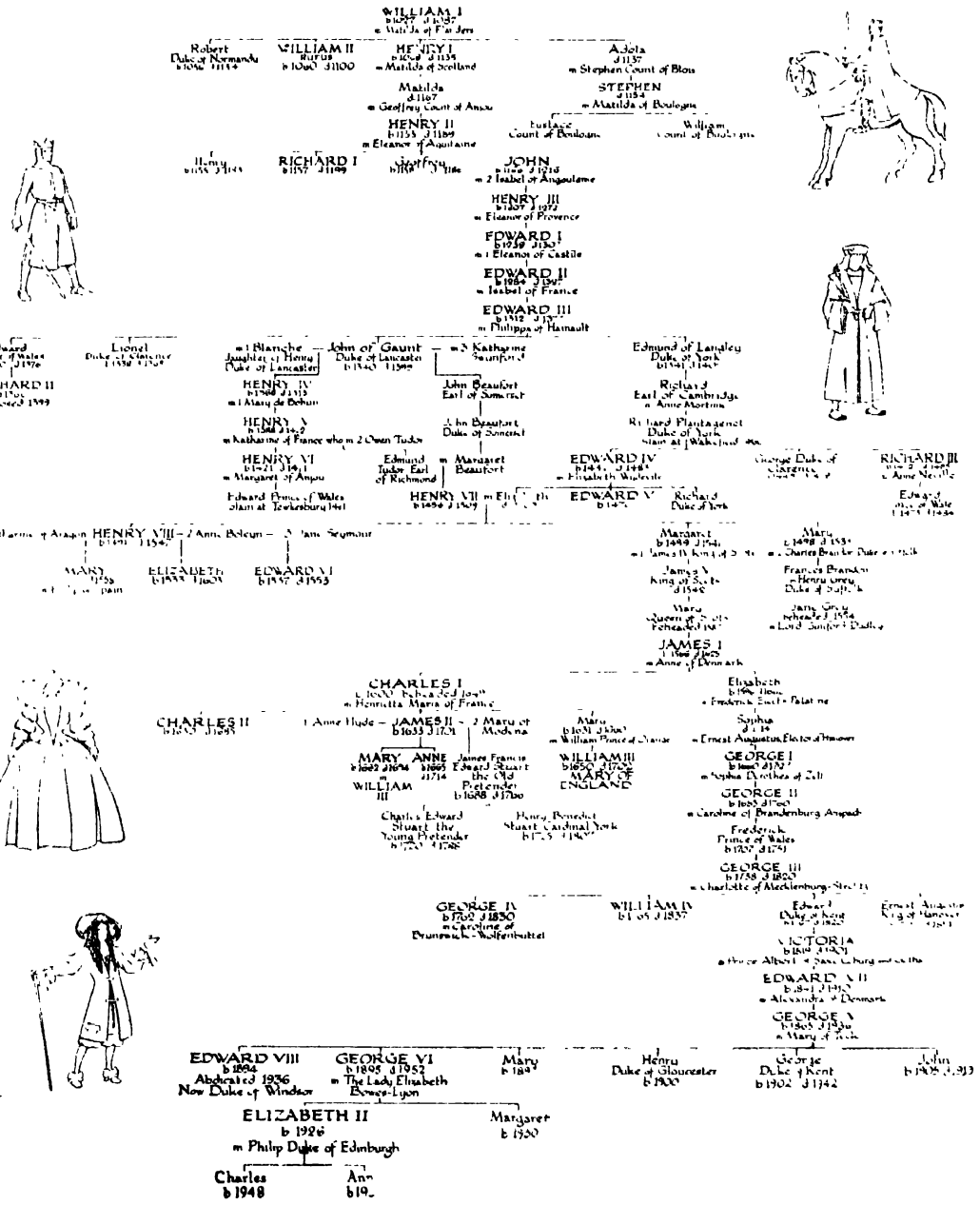
Garibaldi, Giuseppe (1807–82). A sailor in his youth, he became leader of Young Italy. Becoming ruler of Sicily, he crossed to Italy, seized Naples and handed over the conquests to King Victor Emmanuel.

Garlic. Member of the onion family propagated by planting segments of the bulbs known as cloves.
Picture: 1, 278

Garnet. (1) Name of a gem. In colour garnets are pale pink to deep red, though other colours are found in some parts of the world.
(2) A variety of wheat which ripens specially early, 1, 382

Garnett, Richard (1835–1906). Keeper

GENEALOGICAL TREE OF BRITAIN'S SOVEREIGNS



Thirteen hundred years ago there were a dozen or more Kings reigning in different parts of England, but eventually the kingdoms became one. William the Conqueror had claims to the throne which he upheld at the Battle of Hastings in 1066. In this *Genealogical Tree* (see p 149) the descent of our Royal Family from King William I is shown. Actually Queen Elizabeth II can trace her descent back to Egbert (d. 839) King of Wessex and overlord of all England. Though the regular succession has not always been strictly followed, the line of descent from our earliest kings remains unbroken, and the Throne to-day stands as the symbol of unity among all the peoples who form the great British Commonwealth of Nations

of Printed Books at the British Museum, he wrote biographies and works on literature.

Garonne is a river of France about 430 miles in length. Rising in the Pyrenees, it empties into the Bay of Biscay, **4**, 13

Garpike. A fish found in the American lakes resembling prehistoric creatures that lived in the sea, **1**, 16

Garrick, David (1716–79). Went on the stage and rose to be the greatest actor of his time. He also wrote plays and made adaptations of others. He was buried in Westminster Abbey.

Garry is the name of a river of Perthshire. The Pass of Killiecrankie runs through Glen Garry, **3**, 124

Garter, Order of. A British Order of Knighthood, it was instituted in the fourteenth century. The stalls of the knights are in St. George's Chapel, Windsor.
Picture: **2**, 256

Garter Stitch is a particular stitch used in knitting, **8**, 396
Picture: **8**, 397

Garton, John, LL.D. A seedsman of Warrington, Lancashire, who devoted his life to the improvement of grain plants, especially wheat, **1**, 380

Gary is the third largest city in Indiana, U.S.A. It has one of the largest steel plants in the world, **4**, 270

Gas, *i.e.*, coal-gas, is a mixture of carbon and hydrogen, obtained from coal and was first used for lighting purposes in 1792, when William Murdock made experiments and eventually used it in 1802 to light the works in Soho where he was employed. Gas-lighting became established and in a few years was being used in many large towns for street-lighting.
As an illuminant gas has in recent years been largely replaced by electricity, but for heating purposes it has become increasingly important, while the by-products from its manufacture are of great value, **6**, 261 *et seq.*
Pictures. Driving the Gas Home, **6**, 261
How Coal Gas Travels from Retort to Consumer, **6**, 262–263
A Giant Stoker, **6**, 264
A Horizontal Retort House, **6**, 265
Drying the Gas, **6**, 267
Cooling the Gas, **6**, 268
A Labyrinth of Pipes, **6**, 269
Measuring the Heat Units, **6**, 270
A Waterless Gasholder, **6**, 271
A Carburetted Water-Gas Plant, **6**, 273
Laying a Main, **6**, 276
Testing the Pressure, **6**, 276

Gaseous. In the state of gas, like gas. If water is boiled in a kettle, part of it changes into the gaseous form called steam.
Most solid substances become gaseous if heated sufficiently.

Gasholders is the term applied to large structures in which gas is stored as it is manufactured. Most of these holders dip into a tank containing water, though some are waterless, **6**, 270
Picture: **6**, 271

Gaskell, Elizabeth Cleghorn (1810–65). English writer. The book for which she will always be remembered is *Cranford*, written round Knutsford, Cheshire, **7**, 216

Gas Light and Coke Company, formed in 1810, was the oldest gas company in the world and the largest of its kind. It served a population of 4½ millions of people. It now forms part of the State-owned gas industry under the Act passed in 1948, **6**, 261

Gas Meter. Apparatus which measures and records the flow of gas through a pipe, **9**, 345
Picture: How Gas Is Measured, **9**, 348

Gaspe Peninsula. This is the eastern part of the province of Quebec in the Dominion of Canada bordered in the north-west by the River St. Lawrence and in the east by the Gulf of St Lawrence. It was here that Cartier first landed.
Photo tone Supplement: A Commercial Capital and its History, **3**, *between* 160 and 161.

Gas, Poison, was first used as a weapon of war by the Germans in 1915, **2**, 237

Gastric Juice helps us to digest our food. It is the term used for all the digestive juices, **8**, 220

Gate of Tears. This is the name given to the entrance to the Red Sea because so many sailors of ancient times were wrecked there, **3**, 388

Gateshead is a busy industrial town and coal centre of County Durham. It faces Newcastle across the River Tyne, **3**, 81

Gathering, in needlework, is always started with a knot on the right side of the material and the gathers must be stroked with a needle and afterwards set, **8**, 410
Pictures: Beginning a Gather, **8**, 408
Gathers Pulled up for Stroking, **8**, 409
The Stroked Gathers, **8**, 409

Gatineau is the name of a river of Quebec, Canada, which flows into Lake Baskatong. Its waters are used for hydro-electric purposes, **3**, 195

Gatooma. A cotton manufacturing town of Southern Rhodesia, **3**, 296

Gatun Lake. An artificial lake on the Panama Canal which was formed by damming the river Chagres. It stands 85 ft. above sea level and is entered and left by shipping through a series of locks at either end, **4**, 306; **5**, 62; **9**, 313
Pictures: At the Gatun Locks, **5**, 59
Lake Gatun, Panama Canal, **5**, 62

Gaucho, name given to cowboys or stockmen in South America, **4**, 320

Gauge. A measurement, or a device for measuring. The gauge of a railway is the distance between the two rails of a track, which is said to be "to gauge" if the proper distance apart.
Rainfall is measured with a rain gauge; the pressure in a boiler by a steam gauge. Wires are drawn and plates rolled to certain gauges, or standard thicknesses.
—gauges of model railways are: 00 (¾ in.); 0 (1¼ in.) and 1 (1¾ in.), **8**, 346
—gauges of railways in different countries, **9**, 393

Gaul. See *Gallia.*

Gauls were the inhabitants of Gallia, the country that includes what we know as France, parts of Germany, Switzerland and Holland and Belgium.
—how the Gauls invaded Rome, **2**, 58
—Gaul conquered by Julius Cæsar, **2**, 75
—the Gauls sack Rome, **2**, 402
Pictures: In Advance of the Gauls, **2**, 58
Sweeping on the Defenders, **2**, 59
With the Roman Noblemen, **2**, 60

Gaunt, John of, Duke of Lancaster (1340–99). Born at Ghent, in Belgium, he was the fourth son of King Edward III. He became powerful in England but was unpopular with the commoners who burnt his London palace during Wat Tyler's revolt, **2**, 136; **4**, 24

Gauss, Carl Friedrich (1777–1855). One of the most brilliant mathematicians. He invented a new method for calculating the position of heavenly bodies, enabling astronomers to re-discover the planet Ceres

Gay, John (1685–1732). English poet and dramatic writer, best known as author of *The Beggar's Opera.*
Picture: **7**, 75

Gaya is the name of a district of India in the Province of Bihar.
Gaya is the capital of the district. Here grew the sacred bo-tree, **3**, 368

Gaza is a trading centre and town of the Holy Land. It was once a city of the Philistines. Also known as Guzzeh
Picture: **4**, 188

Gazaland is a district of East Africa belonging to Portugal.

Gazelle. A sand-coloured animal, usually having curved horns. There are about twenty varieties. Found in Africa, India, Persia and other parts.

Gazetteer. A dictionary of geography, a book containing lists of towns, rivers, mountains, etc.
—the gazetteer of Pausanias, **2**, 20

G.C. is the abbreviation for George Cross (*q.v.*).

g.c.m. means, in arithmetic, greatest common measure.

Gdansk is the modern Polish name for the ancient Hanseatic port and former Free City of Danzig which is now one of the chief ports of Poland on the southern shore of the Baltic Sea. It is an extremely important shipping centre but suffered considerable damage during the Second World War, **2**, 247; **4**, 48, 126, 128
Picture: **4**, 127

Gdynia is a port of Poland and a centre for the exports of that country.

Gean. A form of wild cherry tree growing to a height of about 30 ft.

Gebel Musa. Name of a mountain of Sinai.
Picture: **1**, 314

Gecko. A lizard found in parts of Europe. Owing to the nature of its feet it can climb walls easily. (*p.h.*)

Geelong. A port of the state of Victoria, Australia. A centre of wool exporting, **4**, 394

Geese. Smaller birds than swans, geese are larger than ducks, but they all belong to the same family. In ancient Rome, sacred geese belonging

to the goddess Juno were kept in the Capitol.
—The Geese That Saved a City, **2**, 58
Picture: **2**, 61
Geirangerfjord is one of the many beautiful deep inlets from the sea on the coast of Norway. Here are found the " Seven Sisters " falls.
Picture: **4**, 34
Colour Plate: The Grandeur of a Norwegian Fjord, **4**, *facing* 52
Gelada. A species of baboon having a short tail, native to Abyssinia and Arabia.
Picture. **1**, 99
Gelatine. A substance obtained from bones and hides by boiling them in water. When soaked in cold water it swells into jelly, which becomes liquid if heated. The gelatine sold for cooking is prepared largely from calves' feet.
The sensitised coating of a photographic plate or film is composed mainly of gelatine, which is used also in the manufacture of many different materials.
Gelderland is a district of Holland, through which flow the Rhine, Maas and other rivers. It grows flax (for the linen industry), tobacco and other crops. The capital is Arnhem.
Gelert was the hound of Llewellyn, who slew it for killing his son, whereas the dog had defended the child from a wolf. Gelert was buried at Beddgelert in North Wales, **3**, 106
Gellivare is a town of Northern Sweden in the centre of an iron-ore district, **4**, 38
Gem is the name given to precious stones, particularly diamonds, rubies, sapphires, topazes and emeralds after they have been cut and polished, **9**, 406
Colour Plate: Precious Stones, **9**, *facing* 316
Gemini, the Twins. One of the Signs of the Zodiac.
Gemshok. One of the antelope varieties of South Africa. The animal has straight horns, **3**, 294
Gendarme. A French word meaning policeman
Genealogical Tree shows in diagram form the descent of a family; a similar device is used to illustrate the development of animals or plants from earlier forms.
Pictures: Of Animals, **10**, 9
British Sovereigns, **10**, 147
General Post Office, often shortened to G.P.O., means the Government department which deals with postal, telegraphic, parcels post, savings bank, radio and similar matters. It was started in 1710 when the first Postmaster-General was appointed.
See *Post Office.*
General Tom Thumb. See *Stratton, Charles Sherwood.*
Generator. A machine for generating or creating an electric current. It has a fixed part, and a revolving part turning inside or outside the other. One part contains powerful electromagnets, which set up currents in the other and in any circuit to which it is connected.
The word is most commonly confined to machines for producing alternating current; and dynamo to those generating continuous current.
Genette. An animal of the civet cat tribe found in Africa, Asia and parts of Europe. Its coat is grey, marked with brown or black.
Geneva is one of the cantons or provinces of Switzerland. It has a capital of the same name which stands at one end of Lake Geneva and is a favourite tourist centre as well as being noted for its industries, **4**, 54
Pictures: Scenes and Persons of the Reformation, **4**, 55, 56
Geneva, Lake of. About forty miles in length, this lake stands in the south-western part of Switzerland, along the frontier with France. At the south-westernmost end of the lake is the city of Geneva; at the other end is the famous castle of Chillon, **4**, 56
Picture: **4**, 54
Genghis Khan. See *Jenghiz Khan.*
Genie. A good or evil spirit of Eastern legends. Whenever Aladdin rubbed his magic lamp, the genie of the lamp appeared to do his bidding The plural of the word is genii.
Genoa is a great commercial city of Northern Italy, on the Gulf of the same name. It was the birthplace of Christopher Columbus, **4**, 149
Gentian. A charming wild flower, particularly the Alpine species. The flowers are small and blue or lilac-coloured. British species include Field Gentian, Marsh Gentian, Spring Gentian and Amarella, **1**, 103. (*p.h.*)
Gentleman Brady was an Australian bushranger whose extreme daring made him a popular hero, **3**, 206
Geoffrey de Mandeville (died 1144) Became Earl of Essex in Stephen's reign and the most powerful of the barons. He was fatally wounded in one of his raids into the eastern counties, **2**, 98
Geoffrey of Anjou. Husband of Matilda, daughter of Henry I, who should have succeeded her father on the throne. Stephen was elected King instead and Matilda invaded England. Eventually, Henry II, son of Geoffrey and Matilda, came to the throne on the death of Stephen, **2**, 97
Geographical Stamps. Postage stamps which are ornamented with maps.
Pictures: **4**, 410
Geography is the science which enables us to understand the earth's surface, how it is divided between land and water, the different countries and the people and animals living in these lands. Herodotus (*q.v.*) left an account of the limits of the world as it was known in his day (484–424 B.C.) and since then many adventurers and explorers have added to our knowledge. See *The Story of the World and Its Peoples,* Vols. **3** and **4**
Also *First Steps in Geography for Tiny Folk,* **9**, 165 *et seq.*
—*Questions and Answers,* **9**, 307 *et seq.*
—*Geographical Facts and Figures.*
See *Atlas Supplement,* end of this Volume.
Special Colour Supplement: Geographical Terms, **9**, *between* 176 and 177
Geology. The science that deals with the story of the earth, **1**, 37; **9**, 316
Geometry is the branch of mathematics which deals with the properties and measurements of lines, surfaces and solids. It is so named because one of its first uses was measuring the earth's surface.
The earliest work on geometry of which we know was written by Euclid, about 2,200 years ago, **7**, 340
George I (1660–1727), King of Great Britain and Ireland. He belonged to the House of Hanover, **2**, 180, 408
Picture. **7**, 161
George II (1683–1760), King of Great Britain and Ireland. He reigned for thirty-three years, **2**, 180, 189, 408
Picture. George II at the Battle of Dettingen, **2**, 182
George III (1738–1820), King of Great Britain and Ireland. During his reign was fought the American War of Independence, **2**, 189, 409
George IV (1762–1830), King of Great Britain and Ireland. He was Prince Regent during his father's illness and was a leader of fashion He had few ambitions beyond a life of extravagance, **2**, 208, 411
—Regent Street originally planned by him, **3**, 20
Picture: The Prince Regent Takes a Walk in Bath, **2**, 208
George V (1865 1936), King of Great Britain and the Empire Beyond the Seas, Emperor of India. Second son of Edward VII and Queen Alexandra, he was christened George Frederick Ernest Albert Coming to the Throne in 1910, his reign saw the Great War of 1914–18. In 1935, when he had reigned twenty-five years, there were Silver Jubilee celebrations. He died at Sandringham in January, 1936, **2**, 229 *et seq.*, 412
Pictures: Watching the Games at Braemar, **2**, 226
A King at the Helm, **2**, 229
Aged Fifteen, **2**, 231
At the Delhi Durbar, **2**, 232
The King in the Jungle, **2**, 233
A Royal Review for Scouts, **2**, 235
George V at the Microphone, **2**, 238
King George's Maxims, **2**, 240
George VI (1895 1952), King of Great Britain, Ireland and the British Dominions Beyond the Seas Christened Albert Frederick Arthur George, he was the second son of King George V and Queen Mary. He married Lady Elizabeth Bowes-Lyon, and had two children–the Princesses Elizabeth and Margaret. In December, 1936, he ascended the throne on the abdication of his brother, Edward VIII, Duke of Windsor King George died at Sandringham on February 6th, 1952, and was succeeded by his elder daughter, who became Queen Elizabeth II, **2**, 243 *et seq.*, 413
—opened Federal Parliament House, Australia, **3**, 199
Pictures: Watching the Games, **2**, 226
Coronation Day, 1937, **2**, 243
The King as a Baby, **2**, 244
All Great-Grandchildren, **2**, 245
A Naval Occasion, **2**, 247
African Rulers at Buckingham Palace, **2**, 25
A Genealogical Tree, **10**, 147

George Cross, The, was instituted in September 1940 by King George VI as a decoration, ranking with the Victoria Cross, as a reward for personal heroism outside the actual field of battle. The George Medal was instituted at the same time.

George Cross Island, The. This is the name given to Malta which was awarded a George Cross in acknowledgment of the gallantry of its inhabitants during the Second World War, **3**, 388
Pictures: **3**, 389

Georgetown. (1) The capital of British Guiana, on the Demerara River, **3**, 386
(2) A city of Carolina, U.S.A.

Georgetown, on the south Atlantic island of Ascension. Here are the telegraph headquarters.
Picture: **3**, 393

George Town is the capital of Penang, a British island forming part of the Straits Settlements.

Georgia is a State of the U.S.A. interested mainly in cotton-growing, though it also produces cereals, fruit and general farm crops. The capital is Atlanta.
Pictorial Map: **4**, 291

Georgian Bay comes to the north-east of Lake Huron in Ontario, Canada, **3**, 179

Georgics, The. One of the great works of Virgil, it deals with farming, the cultivation of trees and such subjects, **7**, 122

Geranium. A small plant with palmate divided leaves and small regular flowers. Most of the Geraniums cultivated in our gardens are not really geraniums at all but belong to the Pelargonium (*q.v.*) family.
The wild geranium belongs to the Crane's Bill family, of which there are several kinds with different coloured flowers, varying from the rose of the Dove's-foot Crane's Bill to purple streaked with red of Herb Robert and the blue-purple of the Meadow Crane's Bill.

Gerenuk. A member of the antelope family, reddish-fawn in colour.
Picture: **1**, 106

Gericault, Jean Louis Andre (1791–1824). Famous French artist, he painted a picture "The Wreck of the Medusa," which was wonderfully realistic, **7**, 72

German, Sir Edward (1862–1936). British musical composer. He wrote the light operas "Tom Jones" and "Merrie England," **7**, 189

Germany. A large country of Central Europe consisting of a number of states which, in many cases, were at one time independent. It has important industries, especially in the Ruhr valley, and its mineral wealth includes considerable coalfields.
Farming and agriculture are important, as is the timber from such regions as the Black Forest. The chief river is the Rhine
Before the Second World War, Germany (the German *Reich*, as it was called) had Berlin as her capital. As a result of her defeat in that war, the whole of her territory was occupied by the Allies (1945). Germany was divided into four zones of occupation—the British, the American, the French, and the Russian—and Berlin, which fell in the Russian Zone, was similarly divided. See *Germany and the Rhine*, **4**, 65 *et seq.*, 354
Pictures: One of the Rhine Castles, **4**, 65
Along the Banks of the Rhine, **4**, 66, 67
A Bird's Eye View of Cologne, **4**, 68
After War's Devastation, **4**, 69
When the Work of Restoration Began, **4**, 70
The Kiel Canal from the Air, **4**, 71
In the Old Hansa Town of Lubeck, **4**, 72
Germany in Ruin, **4**, 73
The Rolling Landscape of the Black Forest, **4**, 74
Where Luther Worked on his Translation of the Bible, **4**, 75
Luther's Study in the Wartburg, **4**, 76
Medieval Rothenburg, **4**, 77
An Old Gate-Tower in Rothenburg, **4**, 78
Bavarian Dancers Entertain, **4**, 79
Oberammergau, Village of the Passion Play, **4**, 80
Under the Watzmann's Shadow, **4**, 81
Life Returns to the Ruhr, **4**, 82
A New Era of Peaceful Industry, **4**, 83
Berlin, A War-Damaged City, **4**, 85
The Tiergarten, Berlin, **4**, 86
A Black Forest Hamlet, **4**, 87

Germination is the starting of a seed into growth. You can watch mustard seeds germinate on wet flannel.

Germiston is a town of the Transvaal goldfields. It has an important airport, **3**, 288

Gerow. A deer of the mountainous districts of India.

Gessler was the name of the tyrannical ruler defied by William Tell, the Swiss patriot, **4**, 56

Gethsemane is on the Mount of Olives, ½ mile from Jerusalem, and here stood the garden to which Christ often went. The place which is believed to be the original site of the garden is still preserved.
Photo-tone Supplement: Scenes in the Holy Land, **4**, *between* 176 and 177

Gettysburg, Battle of, July 1–3, 1863, was one of the decisive conflicts of the American Civil War. In November of the same year President Lincoln made a two-minutes' speech on the battlefield which has become immortal as the Gettysburg Address. This address concluded with the oft-quoted words: "That this nation, under God, shall have a new birth of freedom, and that government of the people, by the people, for the people, shall not perish from the earth."

Geyser. (1) Name given to a bathroom fitment by means of which water is heated.
(2) A spring of hot water issuing from the ground. Geysers are found in New Zealand, the U.S.A., Iceland and other countries, **3**, 258, 358
Pictures: A Geyser in Action, **3**, 255
A Dinner Cooked in Natural Hot Water, **3**, 258

Geyser Valley is a district of the North Island of New Zealand famous for its geysers or natural hot springs, 3, 260

Gezira Plain lies between the Blue and White Niles. It has considerable cotton plantations, but at one time was a dry, barren area. It now grows some of the finest cotton in the world, **4**, 378; **5**, 82

Ghat is a term used in India to mark a descent, *i.e.*, a pathway or steps leading to a river. On either side of the Indian Peninsula, where the high Deccan falls to the sea, are the Eastern and Western Ghats, **3**, 355
Picture: **3**, 355

Ghent is a famous city of Flanders and one of the most important commercial centres in Belgium, **4**, 19, 24

Ghibelline. A person who sided with the German Emperor against the Guelphs, supporters of the Pope, during the twelfth and thirteenth centuries. The Ghibellines were for the most part German landlords **7**, 125

Ghiberti, Lorenzo (1378–1455). A great Italian sculptor, he made the bronze doors for the Baptistery at Florence, **7**, 310

Giant Fish. The story of some monsters of the deep, **1**, 208

Giant Holly is the name of a shrub growing in the Himalayas It has immense leaves.

Giant Panda. *See Panda.*

Giant Puff-Ball, when cut in slices and fried is excellent to eat. It is known as Lycoperdon bovista, **1**, 360

Giant Rays. Sometimes known as Devil Fish, they may measure 15 ft. across their fins. Members of the Skate family, **1**, 210
Picture: **1**, 215

Giant's Causeway is a mass of some thousands of stone pillars, five-sided or three-sided, which stand up out of the sea near Portrush, in Northern Ireland, **3**, 146
Picture: The Giant's Causeway, **3**, 141

Giant's Granny is the name given to one of the rock formations of the Giant's Causeway, Northern Ireland.

Giants of the Animal World. About the elephant and other large animals, **1**, 65 *et seq.*

Giants of the Plant World. What are the biggest trees known to man? **1**, 328

Giant Snail. Variety of this land mollusc found in parts of Africa. Its body is 8 in. in length.

Giant Sloth, a prehistoric animal 20 ft. long.
Colour Plate: **1**, *facing* 36

Giant Toad. Found in South and Central America. May be 6 in. in length.
Picture: **1**, 159

Gibbon. Name given to a variety of ape found in India, Malaya and Thailand. It can walk in an erect position.
Photo-tone Supplement: Monkeys and Their Ways, **1**, *between* 96 and 97

Gibbon, Edward (1737–94). Famous historian who wrote the *Decline and Fall of the Roman Empire*

1764–1788, now regarded as one of the classic contributions to history, 2, 411
Gibbons, Grinling (1648–1721). A famous English wood-carver. Specimens of his work are the choir stalls at St. Paul's Cathedral, 7, 310
– some of his work can be seen at Lyme Hall, near Stockport, Cheshire, 3, 411
Gibbons, Orlando (1583–1625). Famous English composer who wrote much Church and instrumental music
Gibbs, James (1682–1754). A Scottish architect, son of an Aberdeen merchant. He built the Radcliffe Library at Oxford, the Senate House at Cambridge and many churches, 7, 316
Gibraltar is the name of the great rock fortress of southern Europe which guards the western gateway to the Mediterranean Sea. It has been British since 1704. It overlooks the Strait of Gibraltar which is 9 miles wide at its narrowest point and which separates Spain from the coast of North Africa, 4, 129. (*p h.*)
—when Gibraltar fell (1704), 2, 177
Pictures. When Gibraltar became British, 2, 177
Fortress Gibraltar, 4, 131
Gibson, Guy (1918–44), Wing Commander in the R.A.F., V.C., D.S.O., D.F.C. The pilot who led the force that burst the Moyne and Eder dams in Germany in 1943. He lost his life on active service in 1944, 5, 220
Giffard, Henri, was a pioneer in aeronautics. He made an airship, driven by a small steam engine, in 1852, 5, 186
Gigantic is the name of a State Farm or *Sovkhoz* near Rostov. It covers a million acres, 4, 118
Gijon is a port of northern Spain serving the town of Oviedo with its coalfield and iron and steel works, 4, 136
Gilbert, Sir Humphrey (1539–83). A British navigator. He founded the first of our colonies in America, 2, 190
Gilbert, Sir John (1817–97). Great British painter and well-known illustrator. He was born at Blackheath and died there.
Pictures. The Battle of the Standard, 2, 97
Cardinal Wolsey and Henry VIII, 2, 141
Charles I Leaving Westminster Hall, 2, 162
From "The Taming of the Shrew," 7, 135
Gilbert, Sir Joseph Henry (1817–1901). Born in Hull and studied chemistry at London and then under Liebig at Giessen. From 1843 till his death he was director at the Rothamsted experimental station (*q.v.*) in collaboration with Sir J. B. Lawes. Elected F.R.S. in 1860 and knighted in 1893 he did valuable work in agricultural research, 1, 390
Gilbert, William (1540–1603). A physician to Queen Elizabeth, he wrote a book about magnets which served as the basis for the investigation of magnetism, 7, 356
Picture: 6, 149
Gilbert, Sir William Schwenck (1836–1911). Humorist and dramatist, he wrote the *Bab Ballads*, and later became associated with Sullivan in the production of the famous Gilbert and Sullivan operas written between 1875 and 1896, 7, 189
Gilbert and Ellice Islands. A British colony in the Pacific consisting of a number of groups of islands. The headquarters of the colony is on the island of Tarawa in the Gilbert Islands Australian money is used in the colony, whose main crop is coconuts, 3, 390
Gilding means decoration by means of gold leaf, gold being the most malleable of all metals, 6, 85
Gill. One of the two breathing organs of a fish or other animal which uses the air that is dissolved in water.
The word is applied also to the thin plates on the lower side of a mushroom, and to the fleshy flaps or wattles on the head of a fowl.
Picture: How Whales and Fish Breathe, 9, 369
Gillingham (pronounced as though the first G were j in jelly). Market town of Kent closely allied with Chatham, 3, 34
Gillingham (*pron.* hard G). A market town on the Stour in Dorset, about 23 miles from Salisbury (Wilts.). It is a centre for market produce.
Gilmorehill is in Kelvingrove Park, Glasgow and is the site of the University of that city.
Picture: 3, 115
Gilpin, John. A haberdasher of Paternoster Row, London, is said to have been Cowper's original for the famous poem *John Gilpin.*
Picture: 1, 140
Gin is the name of a machine that separates cotton seeds from the fibres, 6, 336
Ginger is a herb, the root of which is used as a spice and for making ginger-bread, ginger-wine, etc. It is grown in many parts of the tropics, 3, 397
Ginner, Charles (1878–1952), is a well-known contemporary British painter who pays great attention to detail.
Photo-tone Supplement: Salisbury Cathedral, 7, *between* 112 and 113
Ginza, The. This is the name of the principal street in Tokyo, Japan. 4, 256
Giorgione (1477–1510). The son of a peasant, he is counted among the great Italian artists.
Picture: 7, 26
Giotto, Ambrogio di Bondone (1266–1336). Very great Italian artist. Some of his magnificent frescoes or wall-paintings still remain, 4, 149; 7, 3
Pictures: The Bewailing of St. Francis 7, 1
St. Francis and the Birds, 7, 5
G.I.P. means the Great Indian Peninsula Railway, of India, 3, 323
Gipping is the name given to the upper reaches of the River Orwell.
Gippsland. This is the name given to the south-eastern region of the State of Victoria, Australia. There are fine timber forests here and also some of the finest Australian cattle, 3, 232
Gipsy Daisy. Name sometimes given to the plant *Scentless Mayweed (q.v.).*
Gipsy Gospels was the description applied to the Testaments which George Borrow sold in Spain, 2, 350
Giraffe. Our tallest animal. In Arabic, the name means "one who walks swiftly." It is found only on the African continent, 1, 69
—why has it such a long neck ? 1, 70
—how does it drink ? 1, 70
—why is a giraffe's coat spotted ? 1, 70
Pictures: Giraffes at Home, 1, 70
Mother and Baby, 1, 61
Giraffe House. A feature of the London Zoo for more than a hundred years.
Picture: 1, 61
Giralda Tower is to be seen at Seville, an ancient city of Southern Spain. It was built by the Moors as the minaret of a mosque during the later years of the twelfth century. It is 350 ft. high and is one of the highest ancient buildings made entirely of brick.
Picture. 4, 132
Giraldus Cambrensis. The pen-name of Gerald de Barri, who lived in the twelfth century, a writer of historical works. One of his books gives a description of Wales as he knew it.
Girl Guides. Founded by Lord Baden-Powell, the Girl Guides are very similar in organisation to the Boy Scouts. Junior girls between the ages of 7½ and 11 are known as Brownies and from 11 to 16 as Guides. Older girls, 16–21 years, are known as Rangers. Girls are trained in good and happy citizenship so that they may be "guides" to the next generation. The final and chief test of a Guide is the doing of a good turn every day, quietly and without boasting. The membership now numbers very many thousands. During both world wars the Guides did a great amount of useful work in many ways Proficiency and good conduct badges are awarded, the highest distinction being the Nurse Cavell badge, awarded for life-saving. The headquarters are at 25 Buckingham Palace Road, London, S.W., where the Boy Scouts have also their headquarters.
Girton. A famous college for women on the outskirts of Cambridge. It was founded in 1869 at Hitchin, moving to Cambridge in 1873.
Girvan is a town and seaport of Ayrshire. It is also a noted holiday resort.
Gissing, George (1857–1903). English novelist. He wrote *The Nether World* and *New Grub Street.*
Giurgevo is the name of a Rumanian town on the River Danube At this point the Danube, which for two hundred miles of its course has been the frontier between Rumania and Bulgaria, leaves the frontier and turns north, 4, 96
Gizeh is a town of Egypt, on the River Nile, a few miles from Cairo. Near by are the famous Pyramids and Sphinx, 4, 195. (Also spelt Giza.)
Pictures: The Pyramids of Gizeh, 2, 402; 4, 195
The Sphinx at Gizeh, 4, 198
Gjedser. A ferry town of Denmark

from which, in normal times, a train ferry goes to Warnemunde, thus linking the railway systems of Denmark and Germany.

Glacier. A slow-moving mass of ice and snow; an ice river, **1**, 39
—how a glacier distributes seeds, **1**, 370
—where glaciers flowed, **9**, 317
Pictures: A Glacier in Alaska, **1**, 39

Gladiator. A man trained to fight in the public arena for the entertainment of the people of ancient Rome. Originally a gladiator fought with a sword against another similarly armed; but other weapons, such as spears and tridents, were introduced later on. (*p.h.*)

Gladiolus. A family of plants that grow from corms. There are tall and dwarf varieties.

Gladstone, William Ewart (1809–98). Leading Victorian politician. Four times Prime Minister of the British Government. His Home Rule Bill was rejected by the Lords and in 1894 he resigned, **2**, 220

Glamis Castle is a Scottish seat of the Earl of Strathmore, brother of our Queen Mother. It is one of the oldest houses in the U.K., **2**, 244, 261
Picture: **2**, 246

Glamorgan is one of the counties of South Wales and has rich coalfields. Nearly half the people of Wales live in this county. The county town is Cardiff, **3**, 93

Glands in our bodies are most important. Our whole natures may depend upon glands, as do good health and normal growth, **8**, 230

Glands, Sweat. See *Sweat Glands.*

Glasgow, the third largest city in Britain, is in Lanarkshire and is placed on both banks of the River Clyde. It is a vast centre of ship-building and has iron foundries and engineering works, besides being interested in textiles and many other industries, **3**, 115, 116, 120
Pictures: Glasgow University, **3**, 115
Building a Liner on the Clyde, **3**, 120

Glasgow School was the name given to a group of young artists who appeared in Scotland, **7**, 105 *et seq.*

Glass. The place and date of the first manufacture of glass is not known, though it was known in Egypt before 1000 B.C. Later the Romans developed glass-making considerably. Nowadays there are three main varieties of glass: flint, window or crown, and bottle glass, **9**, 412
Picture: The Glass-Blower's Art, **10**, 153

Glasspaper. Stout paper coated on one side with powdered glass, stuck on with glue, used for smoothing wood and paint. Much of what is called sandpaper is actually glass-paper.

Glass Snake. A serpent common in the United States; its body breaks very readily.

Glastonbury, Somerset, is associated with the legends of King Arthur. Here one of the first Christian churches in England was established and the place had a very large abbey. Dunstan became Abbot of Glastonbury, **2**, 88
—a cradle of the English Church, **3**, 58
Picture: The Abbot's Kitchen at Glastonbury, **3**, 58
The Pilgrims Inn, **7**, 318

Glastonbury Abbey is the oldest religious foundation in England and dates from A.D. 63 when it was founded by Joseph of Arimathea (*q.v.*), **3**, 58
Picture: **3**, 58

Glazier. A man whose business it is to cut up glass and fix it into window-frames, greenhouse roofs, etc.
He is dependent entirely upon the *glass-blower,* the man who blows glass in a cylinder which is slit lengthways and heated till it flattens out into a sheet of window glass.

Glazing means: (1) To fit glass, this work being carried out by a glazier. (2) To impart a smooth surface by the application of a glazing material. Pottery ware made as a handcraft may need to be sent away for glazing under great heat, **8**, 404

Glen Affric is in the Scottish Highlands and is the scene of one of the new schemes for producing hydro-electric power, **3**, 128

Glencoe is a famous valley-pass of Argyllshire, Scotland. It was here in 1692 that the Massacre of Glencoe took place when the Campbell clan while being entertained by the Macdonalds rose in the night and treacherously killed their hosts.
Picture. **3**, 126

Glendower, Owen, was a Welsh leader, born in Montgomeryshire about 1354. He fought for Welsh independence and never submitted to English rule. He burned the Bishop's Palace at Llandaff in 1402, and two years later captured Harlech Castle. **2**, 129, 404
Picture: **3**, 98
Colour Plate: Historic Harlech Castle, **3**, *facing* 92

Glenfinnan, Inverness-shire. Here Prince Charlie's banner was displayed in 1745, on the shore of Loch Shiel.
Picture: **3**, 127

Glen Garry. (1) The glen of the Perthshire River Garry up which runs the Pass of Killiecrankie, **3**, 124
(2) A glen of the Inverness-shire River Garry. It gives its name to the glengarry, a bonnet worn by the men of many Scottish regiments.

Glen More is a famous beauty spot and valley of Inverness-shire, Scotland, **3**, 128

Glen Nevis, Inverness, Scotland, is one of the Highland beautyspots. The slopes of the Glen are covered with Forestry Commission plantations.
Picture: **3**, 123

Glider. An engineless aeroplane, launched by being towed. With it the skilled pilot is able to imitate soaring birds, which sustain themselves on motionless wings by taking advantage of rising air-currents, **5**, 184
Pictures: A Glider with Bird-like Wings, **5**, 185
A Two-Seater Sailplane, **5**, 212
In Motorless Flight, **10**, 157

Glider, Model. How to make a 14-in. span glider, **8**, 325; a 36-in. span tow-launched glider, **8**, 335
With *Diagrams.*

Glinka (1804–57). Notable Russian musical composer, **7**, 186

Glittertind is a mountain peak of Norway. It is over 8,000 ft. in height, **4**, 36

Globe. A spherical body, the whole of the exterior being equidistant from the centre. The word is often used to signify the Earth; also for a globe on which is drawn a representation of the lands and oceans of the world. (*p.h.*) See also *Maps.*

Globe Artichoke. A vegetable that produces large heads of flower which are much esteemed at table. A perennial plant.

Globe Fish. A fish found in tropical seas. Normally it is the usual shape of a round-bodied fish but it has the power of filling its body with air until it becomes more or less globe-shaped. The largest are nearly 2 ft. in length and, like many tropical fish, the fish is beautifully coloured.

Glommen is a river of Norway, emptying into Oslo Fjord. It has good farming land on either bank, **4**, 37

Glory of the Snow. Popular name for the bulbous plant Chionodoxa

Glossop. A town of Derbyshire, a great centre of textile industries

Gloucester is an ancient city and port, the county town of Gloucestershire It stands on the River Severn and is noted for its magnificent cathedral.
—Coronation of Henry III, **2**, 107
Pictures: Gloucester Cathedral, **7**, 302

Gloucester was the name of one of Anson's vessels in his famous voyage round the world, **2**, 319

Gloucester, Henry William Frederick Albert, Duke of (born 1900) Third son of George V, he married Lady Alice Montagu-Douglas-Scott, daughter of the 7th Duke of Buccleuch, in 1935. They have two sons, Prince William (born 1941) and Prince Richard (born 1944). He was Governor-General of Australia, 1945–47.

Gloucester, Richard, Duke of. See *Richard III.*

Gloucestershire. One of England's western counties, it is famous for the Cotswold Hills, the River Severn, and the Forest of Dean. It has many industries and is known for its farms and dairy produce *Abbr.* Glos
Picture Roofs of Thatch and Stone, **3**, 78

Glow-Worm Cave is one of the famous caverns at Waitomo, in the North Island of New Zealand, **3**, 261

Glow-Worms are really beetles. It is the female glow-worm that emits light during summer nights, **5**, 108

Gluck, Christoph Willibald (1714–87) A German musician, he laid the real foundations of opera, **7**, 172

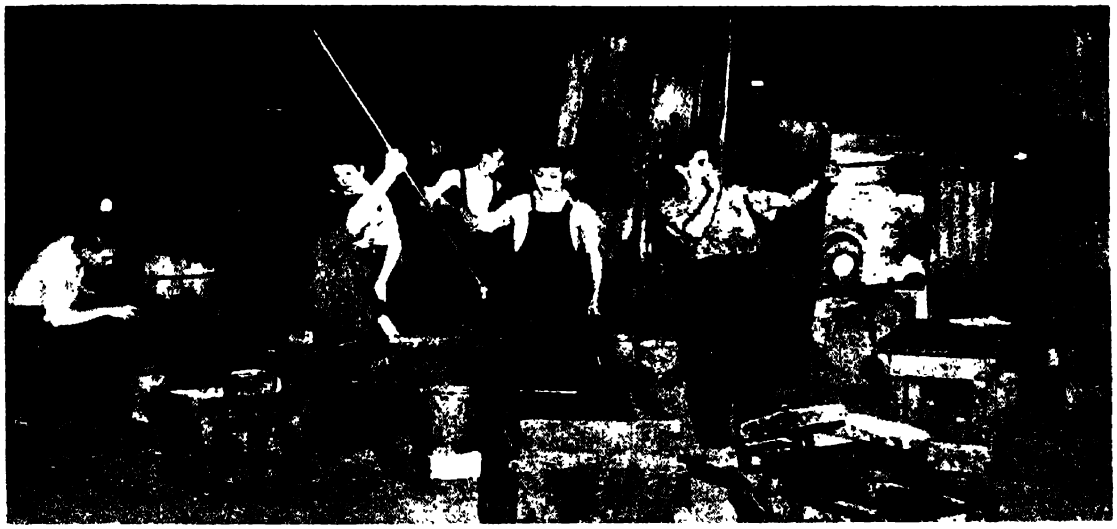
Glucose. Grape sugar; a variety of sugar less sweet than cane sugar, produced from grapes and starch.

Gluten. Substance in wheat which gives strength to loaves of bread, **1**, 380

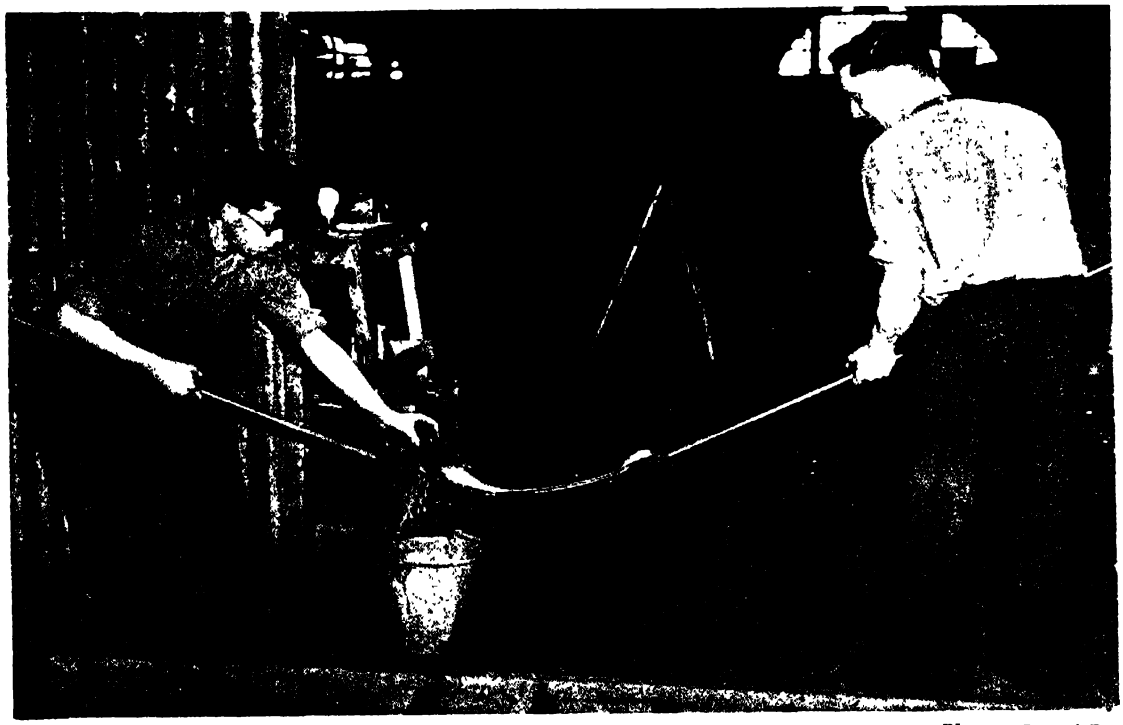
Glutton. Name given to a kind of weasel, the largest of its tribe. It has a snout like a dog and is found in many parts of the world. It may be more than 3 ft. in length. Also known as Wolverine.

Glyptodon. Name of an extinct

THE GLASS-BLOWER'S ART



The art of making *glass* (see p. 152) was known to the ancient Egyptians and even in early times simple vessels and rough window glass were made in the South of England. Our picture shows a typical scene in a glass works where the blowers are handling the molten glass in its first stages. In recent times machines have been devised to perform all the operations necessary for such articles as bottles, electric light bulbs and tumblers, but the skilled glass-blower is still very necessary.



Photos : Central Press.

In this picture we see one of the stages in the making of a thermometer tube. A "gathering" is being attached to the post-iron prior to drawing-out, when the molten tubing is drawn through a tunnel, then laid on a ladder for cooling and breaking into suitable lengths. These lengths are later tested for bore and measurements but rarely is there a fault.

armadillo. Its fossil remains are found in South America.
Colour Plate: Animals of Prehistoric Times, **1**, *facing* 36

gm. means gramme.

G.M.T. means Greenwich Mean Time.

Gnat. A yellow-brown insect which begins its life in the water and passes through many phases before it emerges and takes to the air, **1**, 272
Pictures: **1**, 272, 273, 274

Gnawing Animals. Beavers, squirrels, rats, rabbits and other creatures having chisel-like teeth. They are known as rodents.

Gnu. An animal having a head something like that of a bison and hinder-parts resembling those of a horse. It is about 4 ft. in height at the shoulder and has horns. A species of antelope, it is often found in company with the zebra. It is also known as the Wildebeest.
The animal is a native of Africa.

Goa is a coastal district of India, to the south of Bombay. It belongs to Portugal.

Goanna. The largest type of Australian lizards Its name comes from Iguana though it does not belong to that species, but to the monitors.
Photo-tone Supplement: Wild Life in Australasia, **1**, *between* 336 and 337

Goat, Angora. See *Angora Goat.*

Goat, Cashmere. See *Cashmere Goat.*

Goatfell is the name of the highest peak on the Island of Arran. It rises to a height of nearly 3,000 ft.

Goat Island divides Niagara Falls into two distinct parts, **3**, 192

Goat Moth. See *Moth.*

Goat, Nubian. See *Nubian Goat.*

Goats are kept on many farms for the milk the "nannies" yield, **6**, 381
Picture: **6**, 384

Goats as Pets. How to house and feed; tethering; grooming; drawing a carriage, **8**, 318
Picture. Brought up on the Bottle, **8**, 313

Goat's Beard. A wild plant that usually closes its flowers at mid-day. It gets its name from a beard of fine hairs with the help of which its seeds are scattered by the wind.
Pictures: A Plant that Sows its own Seeds, **1**, 372
Parachutes Begin Their Flight, **1**, 373
Seeds at Journey's End, **1**, 374
Colour Plate: **1**, *between* 304 and 305 (Plate 1)

Goatsucker. Name sometimes given to the bird *Nightjar* (*q.v.*).

Goat Willow. A variety of willow tree often known as the sallow.
—beating the sallows for moths.
Picture: **8**, 287

Gobbins, The. A cleft in the rocks in the neighbourhood of Larne, Northern Ireland. It is spanned by a curious bridge of oval girders.

Gobi Desert, occupying some 300,000 square miles, is a sandy waste of Mongolia. It was traversed by Marco Polo and his companions, **2**, 268; **4**, 238
Picture: **2**, 269

Goblins' Lanterns. A Poem by Marion St. John Webb, **9**, 113

Goby. Name of a family of fish, some of which are found in British waters. They have fins so arranged as to form suckers by which the creatures attach themselves to rocks.

Goby, Rock. See *Rock Goby.*

Godalming is a small residential town of Surrey, near Guildford. The famous Charterhouse School is in the district.

Godavari is the name of a river of India, 900 miles in length. It is one of the sacred rivers, flowing into the Bay of Bengal. The name is also given to a district of Madras, **3**, 324

Godetia. Favourite hardy annual plant with flowers of many shades, **8**, 278

God of Waters is the name Indians give to the Kaieteur Falls of British Guiana, nearly five times as high as Niagara, **3**, 385

Godwin, Earl (died 1053), became an English earl in the reign of Canute. In 1035 he helped Hardicanute to become King and later in 1042 supported the succession of Edward the Confessor. Godwin's daughter married Edward. In 1053 he died, but one of his sons, Harold, became King of England in 1066. His other sons were Sweyn, Tostig, Gurth and Leofwine. The Goodwin Sands take their name from Earl Godwin, **2**, 93

Godwin-Austen is the name of a peak in the Himalayas, 28,250 ft. in height.

Goeschenen. A town of Switzerland at the northern end of the St. Gothard railway tunnel, **4**, 64

Goethals, Colonel George. He was one of the American army engineers who directed the building of the Panama Canal, **4**, 306

Goethe, Johann Wolfgang von (1749–1832). One of the world's greatest poets, he was a German educated at Leipzig. The writing of *Faust* occupied him for nearly half a century.
—a friend of Beethoven, **7**, 166
—he championed the Panama Canal project, **4**, 306

Gogarth Abbey is near Llandudno. It was here that Lewis Carroll wrote *Alice in Wonderland*, **3**, 108

Gold is one of the elements (symbol Au), a heavy yellow metal, valued for its durability. It is almost indestructible and is the most malleable of all metals and was probably the first metal used by man. About 25,000 tons of gold have been produced in the world since 1492, **6**, 85 *et seq.*
—Canadian Gold, **3**, 165 *et seq*
—Australian Gold, **3**, 204, 220
—South African Gold, **3**, 289
Pictures: The Hollinger Gold Mine, **3**, 164
Gold Dredging in Klondike, **3**, 166
Kalgoorlie Gold, **3**, 220
Kalgoorlie's Golden Mile, **3**, 239
In a South African Mine, **3**, 282
A Scene in the City of Gold, **3**, 284
Weighing Bars of Solid Gold, **6**, 85
Gold Mining in the Klondyke, **6**, 86
The Trail of '98, **6**, 97
At Work in a South African Mine, **6**, 88
With the Gold Seekers, **6**, 89
Taking Samples for Testing, **6**, 90
Sluicing for Gold, **6**, 91
A General View of Crown Mines, Johannesburg, **6**, 92
Stages in Winning the Gold, **6**, 93
Another Process in Gold-winning, **6**, 94
Pouring Out Liquid Gold, **6**, 95
Down a Deep Gold Mine, **6**, 96

Gold-beater's Skin is made from the inner membrane of the stomachs of oxen, **6**, 100

Gold Coast. A British colony of West Africa. It is so named from the gold found in its streams. The capital of the colony is Accra. Ashanti and the Northern Territories are attached to the colony, also Togoland. Cocoa provides the main industry, **3**, 380 *et seq.*; **4**, 384
Pictures: Gold Coast Castle, **3**, 379
For the First General Election, **3**, 383
A Cocoa Farmer at Work, **4**, 376
Splitting Cocoa Pods, **4**, 377
A Gold Coast Cocoa Farm, **4**, 378

Gold Dust. Name given to the perennial plant Alyssum saxatile (*q.v.*).

Golden Back. Term sometimes applied to the *Natterjack* (*q.v.*).

Golden Borough, The. Name given in olden days to *Peterborough* (*q.v.*).

Golden Chain is a popular name for the *laburnum* (*q.v.*).

Golden-Crested Wren. The smallest of European birds, being only 3½ in. in length. Lays the smallest egg produced in this country by any bird, **1**, 171

Golden Eagle. See *Eagle.*

Golden Eggs, The Goose That Laid the. A Fable from Æsop, **5**, 324

Golden Fleece. See *Jason.*

Golden Gate. A gateway in the Theodosian Walls of Constantinople which were built by the Emperor Theodosius II over 1,500 years ago. This gate was only opened for triumphal processions.
Picture: **4**, 162

Golden Gate is the name of a strait which connects San Francisco with the Pacific, **4**, 268, 273

Golden Gate Bridge is a suspension bridge, spanning the Golden Gate Strait at San Francisco, U.S.A.
Photo-tone Supplement: Bridges Big and Little, **5**, *between* 64 and 65

Golden Gleam is the name of a comparatively new race of Nasturtiums bearing scented blossoms.

Golden Hamster. See *Hamster, Golden.*

Golden Hind. The name of the ship of the great navigator and adventurer Francis Drake, who was the first Englishman to sail completely round the globe.
Colour Plate: **2**, *facing* 148

Golden Horn is the name given to the water gateway or inlet of the Bosporus to Istanbul (Constantinople), **4**, 160

Golden Mile is the name given to the rich goldfields of Kalgoorlie, Western Australia, **3**, 205
Picture: **3**, 239

Golden Mosque at Samarra in Iraq is a place of pilgrimage for pious Moslems. Samarra stands on the River Tigris.

Golden Moss is another name for the plant *Yellow Stonecrop* (*q.v.*).

Golden State is a term applied to California, U.S.A., because of its great natural wealth and its wonderful climate.

Golden Temple is the chief glory of Amritsar, the holy city of the Sikhs, **3**, 337
Picture: **3**, 339
Golden Temple is the name of a great Hindu place of worship in the holy city of Benares in India, **3**, 359
Golden Touch, The King with the. A tale from the Greek myths and legends, **5**, 345
Goldfields. A mining centre in the North-West Territories of Canada, **3**, 126
Goldfinch. One of the most beautiful of British birds. It has a crimson "blaze" round its head.
Colour Plate: British Wild Birds, **1**, *between* 160 and 161 (Plate 3)
Goldfish. A fish of the carp family, it was first introduced into England in 1691, **1**, 223, *et seq.*
—keeping in glass bowls, **1**, 225
—fungus disease, **1**, 224
—members of the carp family, **1**, 224
—teaching simple tricks, **1**, 225
—to breed goldfish, **1**, 224
—goldfish as pets, **8**, 319
Pictures: Comet Goldfish, **1**, 225
Veil-Tailed Goldfish, **1**, 224
Goldilocks. Name given to a species of the plant buttercup, **1**, 303
Gold Leaf is gold beaten by a lengthy process into extremely thin sheets which are used mainly in gilding and decoration. Gold-beating is one of the world's oldest industries, **6**, 97 *et seq.*; **9**, 412
Pictures: One of the Oldest of the Ancient Arts, **6**, 97, 98, 99
Gold-Mining. Gold is found in most parts of the world, but the chief sources are the Transvaal, United States of America, Australia, Rhodesia, Canada and the Soviet Union. The most primitive form of mining is to wash the gravel of a river bed in a pan, but heavy machinery is now used in the great goldfields. *See Gold.*
Goldsmith, Oliver (1728–74). Son of an Irish clergyman, he wrote books and plays. *The Vicar of Wakefield* is his masterpiece, **7**, 139
Picture **7**, 139
Gold Standard is a term used to indicate that a country's currency is by law linked with gold and made exchangeable for gold on a fixed basis, **9**, 356
Golf is a very ancient game, known to have been played at St. Andrews before 1413. James I introduced it into England when he came from Scotland. Every golf ball contains nearly 200 yards of rubber thread covered with gutta-percha
Picture: Making Golf Balls, **9**, 230
Goliath Beetle. An African insect, it may measure up to 5 in. in length.
Gomal is the name of both a river and a pass both of which go from Afghanistan into Pakistan, **3**, 340
Gomera is one of the *Canary Islands* (*q.v.*).
Gomez was pilot of the *San Antonio* under Magellan, **2**, 284
Gondola. A long and narrow boat, usually with curved ends and often having a canopy in the centre. Gondolas are seen mostly at Venice, the men who row them being gondoliers.
Picture: **4**, 150
Good Health. The fight against disease and ill-health has been a long struggle by medical men and other scientists since the days of Hippocrates, "the father of medicine," and still goes on. Men such as Harvey, Hunter, Jenner, Pasteur, Lister, Simpson, and in later years Banting, Alexander Fleming and others have brought about great advances. The history of these is told in *The Fight for Good Health* and *How Science Aids the Doctor*, **7**, 379; **7**, 386
Good Hope was one of the ships of Sir Hugh Willoughby, **2**, 304
Picture: **2**, 304
Good King Henry, or Mercury. A plant grown particularly in Lincolnshire as a substitute for spinach.
Goodoo Gorge is near a famous pass of the Drakensberg Mountains, in Natal, **3**, 307
Goodwin Sands lie about five to six miles off the coast of Kent and the great sandbanks stretch for about ten miles. They have been the scene of many wrecks throughout the centuries, though they form a natural protection to the anchorage of the Downs, **9**, 308
Pictures. Wrecked on the Goodwin Sands, **8**, 67
East Goodwins' Lightship, **8**, 104
Goole. A town and port of Yorkshire with docks and many manufactures. It is a sister-port to Hull and has business in oil-seed and palm kernel crushing, **3**, 72 and 84
Goosander. A variety of wild duck noted for its diving abilities. It has a red beak and is sometimes found in the North of Scotland.
Goose. The domestic goose was known in very early times. The two chief breeds are the Emden and Toulouse. Geese are much used at table at Michaelmas (September 29th) and at Christmas
A young goose is a gosling.
Goose Bay, Hamilton Inlet, on the coast of Labrador, is a valuable air base, **3**, 198
Gooseberries are produced on hardy bushes to be found in most kitchen gardens. There is a wide choice of varieties The bushes are easily propagated from cuttings of young wood.
Goosegrass. Name of a hedgerow plant known sometimes as cliver, clider or cleavers, **1**, 305
—its clinging seeds, **1**, 371
Goose, Solan. See *Gannet.*
Goose-step. A way of marching much favoured in the German army on ceremonial occasions It gives the impression of supreme arrogance, **2**, 242
Goose that Laid the Golden Eggs, The. A Fable from Æsop, **5**, 324
Goose-Weed. Another name for the plant *Silverweed* (*q.v.*).
Goose, Wild. See *Wild Goose.*
Gopher. A squirrel-like animal with a short tail. It is found in many parts of North America and in certain districts of Asia.
Gopher, Pocket. See *Pocket Gopher.*
Gopurams is the name given to the tall gateways by which one gains access to Indian temples, **3**, 316
Gordian Knot. In the citadel of Gordium (*q v.*) Alexander the Great found a waggon with its harness pole fast knotted to the yoke. It was said that whoever should undo the knot would become king of all Asia. Alexander saw that it was impossible to untie the knot so raised his sword and cut it in two.
"Cutting the Gordian knot" is an expression now used if one deals without hesitation with a difficult problem, **2**, 42
Gordium. A city of Phrygia, one of the ancient countries of Asia Minor associated with Alexander the Great. Here originated the term Gordian Knot (*q.v.*), **2**, 42
Gordon, Adam Lindsay (1833–70). Well-known Australian poet, he wrote *Whispering in the Wattle Boughs.*
Gordon, Charles George (1833–85). A great British soldier. Fought in the Crimean War. Was entrusted with important military work in the Sudan and besieged in Khartoum. Here, before British forces could relieve him, he had been killed by the Mahdi's forces, **2**, 222
—he was avenged by Lord Kitchener in the Sudan Campaign, **2**, 222, 236
Gordonstoun is in Scotland. At a small public school here H.R.H. the Duke of Edinburgh was educated, **2**, 266
Gorey Harbour is in Jersey, Channel Islands and is noted for its oysters. Overlooking the harbour is Mont Orgueil Castle.
Picture: **3**, 53
Gorgas, Colonel William (1854–1920). He was one of the American army officers who directed the building of the Panama Canal, **4**, 306
—he organised a "mosquito brigade" to fight mosquitoes in the Panama Canal region, **5**, 58
Gorgoras. Flowers found in South American forests. They have intensely red blooms, **1**, 366
Gorilla. The largest of the apes. The animals live mainly in trees and bamboo forests, Central East Africa being their chief home, **1**, 98
Picture: **1**, 99
Photo-tone Supplement: **1**, *between* 96 and 97
Gorki is the sixth largest town in the Soviet Union and stands about half way between Moscow and the Ural mountains. It is the chief town of the Gorki region of the Russian Soviet Federal Socialist Republic of the U.S.S.R. It is a centre of the fur trade and also an important industrial centre, **4**, 110, 117
Picture: **4**, 109
Gorky, Maxim (1868–1936). Widely known Russian dramatist and novelist.
Gorse. A common wild shrub covered with sharp spines. It is in flower through almost all the year. Also known as *Furze*, **1**, 306, 335, 351
Picture: **1**, 352
Colour Plate: **1**, *between* 304 and 305 (Plate 2)
Gorsedd is the Welsh name for the

assembly of Bards at an Eisteddfod (*q.v.*), 3, 99

Gort, Field-Marshal Lord (1886–1946). Distinguished British soldier who gained the V.C. in 1918. On the outbreak of the Second World War he took command of the British forces in France (1939–40), 2, 249

Goslar. An old town situated in the Harz Mountains of Germany. Its old walls and the palace of the emperors can still be seen, 4, 85

Goslings. The name given to the young of geese.

Gosplan is the State Planning Commission of the Soviet Union. It decides, among other things, what shall be produced on the Collective Farms, but its decisions can be altered by discussion at these farms, 4, 118

Gosport is a famous naval centre of Hampshire, adjacent to and connected with Portsmouth by a floating bridge

Gota is the name of a river in Sweden and also that of a canal. The latter traverses Southern Sweden, 4, 45

Göteborg. See *Gothenburg*

Gotemba. A town of Japan, a centre for those who come to climb Mount Fujiyama, 4, 255

Gothenburg is a great seaport of Southern Sweden. It has many industries, including shipbuilding, 4, 37, 46

Gothic Architecture is a style of architecture which in this country succeeded the Norman style. Its great characteristic is the pointed arch, often of great height. Many of our most beautiful cathedrals are in this style, 7, 298

Pictures: The Gothic Arch, 7, 299
The Gothic Pillar, 7, 300
The Flying Buttress, 7, 301
Winchester Cathedral, 7, 303
Lincoln Cathedral, 7, 306

Gothland, or Gotland, is a Swedish island in the Baltic. Its port of Wisby has a long history as a trading centre, 4, 73

Goths. A Germanic tribe who lived originally on the shores of the Baltic. They began moving southwards about the second century A.D. and with other tribes challenged the Roman Empire, 2, 403

Gottwaldov. One of the chief towns of Czechoslovakia and until recently known as Zlin, it contains the largest shoe factory in Europe, 4, 92

Goufa is the name given to a circular boat as used in Iraq, 4, 202

Gounod, Charles Francois (1818-93). One of the greatest of French musicians and composers. His most beautiful work is his *Faust.*

Gourock stands on the River Clyde in Renfrewshire. It is a holiday centre at which Clyde steamers call

Government. In a democratic country such as ours, the *Government* signifies the body of men and women who are responsible to Parliament for governing the country in accordance with the laws. They consist of the Prime Minister and the heads of the different government departments or ministries, and the most important of them form what is known as the Cabinet. As distinct from the *central* government of the country, there is a system of *local* government, under which powers and duties are exercised by local governing bodies, such as county councils, boroughs, urban district councils and rural district councils.

See *Citizens of Britain,* 9, 35 *et seq.*
Government, Institutions and Customs, 9, 317 *et seq.*

"Governor of the Ranges" was the title used by Michael Howe, an Australian bushranger, 3, 205

Gower Peninsula. Part of the coastline of Glamorganshire, South Wales. Its principal town is Swansea.

Gowrie, Carse of. See *Carse of Gowrie.*

Goya, Francisco Jose de (1746–1828). The son of a peasant, he became one of the greatest of Spanish painters, 7, 60

Pictures: From a Painting by Goya, 7, 60
Charles IV on Horseback, 7, 61
The Snowstorm, 7, 62

Gozo. One of the islands which go to form the British colony of Malta in the Mediterranean. The others are Malta and Comino, 3, 387

G.P.O. stands for General Post Office. See *Post Office.*

Grace, William Gilbert (1848–1915). A Bristol doctor who became one of the greatest of cricketers. In 1871 he made 2,739 runs and during his career scored more than 54,000 runs.

Gradient is the degree of slope or inclination of the ground over which a railway or road passes. It is also the name given to a part of a track which slopes.

Road signs are placed on dangerous hills giving the gradient as a warning to rash drivers.

Graduated means something divided by marks made at regular intervals. A thermometer is graduated to show degrees of temperature; a carpenter's rule is graduated in feet, inches and fractions of an inch; a clock-face in hours and minutes.

Graf Spee. A German battleship sunk by the Royal Navy in 1939, 2, 248

Graf Zeppelin. A German airship with a capacity of 3,708,000 cubic feet, 5, 187, 9, 296

Graham, Thomas (1805–69). A great investigator of the behaviour of substances in solution and of the distinctions between various gases

Grahame-White, Claude (born 1879). A pioneer British airman, he won the Gordon Bennett aviation trophy in 1910, 5, 194

Picture For the Flight to Manchester, 5, 196

Graham Land is in the Antarctic regions, opposite Cape Horn, 2, 368

Graham of Claverhouse, was charged with enforcing the law against the Covenanters (*q.v.*) in Scotland and for his loyalty to King James II was made Viscount Dundee. He was killed at the Battle of Killiecrankie (1689), 2, 171

Grahamstown. An important city of the Cape Province, Union of South Africa. It is a centre for wool.

Graminivorous. Description given to the grass-eating animals, 1, 339

Gramophone. An apparatus for reproducing speech or music by means of a needle passing along an indented groove in a hard disc, usually a prepared wax plate.

The needle may either affect a diaphragm directly, or operate a valve amplifier, which moves a diaphragm electrically. The first impression is known as the "master," and from it a copy known as the "mother" of the record is made, 6, 169

Pictures: You Will Recognise This, 6, 168
Testing the Records, 6, 169, 171
The Stages of Record Making, 6, 172
A Complete Entertainment Programme for the Home, 6, 173

Grampians is the name of the range of hills that form the Central Highlands of Scotland. The highest peak is Ben Nevis, 2, 246; 3, 128

Grampus. A large fish belonging to the dolphin family. It is a savage creature and preys on other fishes. Though belonging to the Arctic regions it is found all over the world. It is black on top and white underneath and attains a length of 20 ft. and over.

Granada. A district of Spain noted for its fruits and agricultural produce. It has a capital of the same name where was built, 700 years ago, the great Moorish fort and palace of Alhambra, 4, 134, 136

Photo-tone Supplement Built by Moor and Monarch, 4, *between* 112 and 113

Granary. A storehouse for grain after it has been threshed or separated from the husk or seed-covering. The huge granaries on the prairies of Canada are called elevators. In olden times Egypt was the granary of Rome, in the sense of a chief source of wheat

Grand Canal is the name of an inland waterway in Ireland which links Dublin with the Shannon, 3, 141

Grand Canal. One of the chief waterways of Italy's island-city of Venice

Pictures. 4, 150 and 151

Grand Canal of China extends from Peiping to Hangchow. It is the oldest and longest canal in the world, stretching a distance of 1,290 miles. It was begun in 540 B.C. and was extended in A.D. 610 and later, 4, 226

Pictures: 4, 224; 5, 54

Grand Canary is one of the *Canary Islands* (*q.v.*). Las Palmas is the principal town, 4, 140

Grand Canyon is a deep gorge in Arizona, U.S.A., the most remarkable of a series cut in the Colorado plateau by the age-long erosion of the Colorado River. This particular canyon extends for over 200 miles, and is between 3,000 and 6,000 ft. in depth, 2, 353; 4, 273

Picture: 4, 274

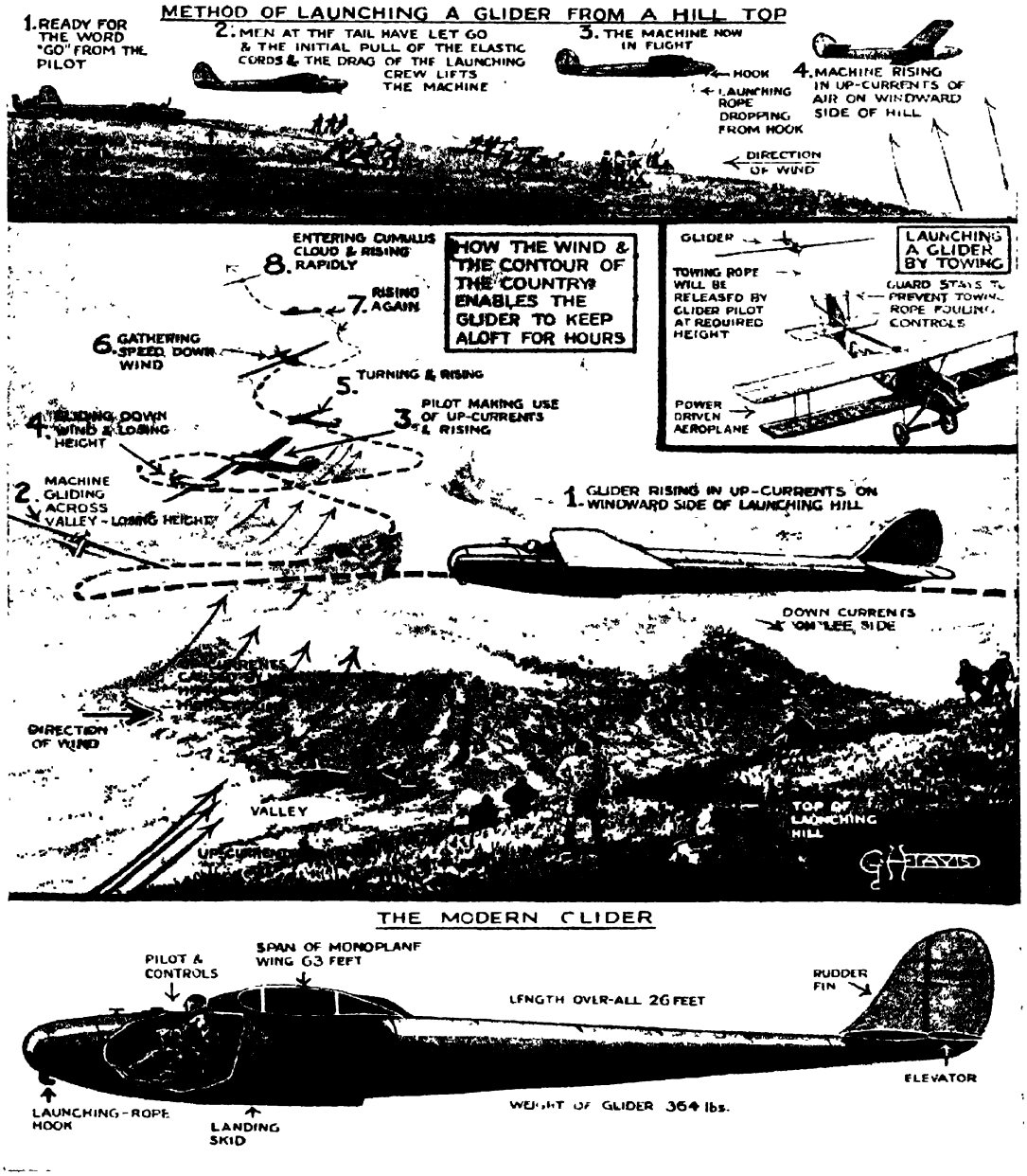
Grand Coulee Dam is on the Columbia River of the U.S.A., 4, 293

Grand Duchy of Warsaw was a small state created by Napoleon. It lasted only so long as Napoleon's armies were there to keep it in being, 4, 123

Grand Falls. One of the largest paper and wood-pulp centres of Newfoundland, 3, 161

Grand Monarque, meaning Great King, was the title given to Louis XIV of France, 4, 8

IN MOTORLESS FLIGHT



Specially drawn for this work.

The early pioneers in aviation gained much of their knowledge of air currents and the problems to be overcome before flight in heavier-than-air machines was a possibility by their experiments with some form of *glider* (see p. 152). Gliders towed by aircraft were used on a considerable scale during the Second World War. To-day, gliding in an engineless aeroplane is a sport as well as a useful aid in learning to fly heavier-than-air machines. A height of over 36,000 feet has been claimed in the U.S.A. (1950) while a distance of 232·6 miles, flown in a glider from Hertfordshire to Cornwall in May, 1949, is the British Gliding record.

Grand Place means "Great Square" and is the name given to the square in which the ancient town hall of Brussels stands, **4**, 24
Picture: **4**, 24

Grand Pré is a town of Nova Scotia, Canada, overlooking the Minas Basin which leads out into the Bay of Fundy. It has associations with the early settlement of Nova Scotia.
Picture: **3**, 183

Grand Remonstrance was the statement of the Commons' case against Charles I, drawn up in 1641. It was the starting-point of the Civil War (*q.v.*)

Grand River, in the United States, has its source in Colorado, and flows into Utah, there to join the Colorado River, **2**, 353

Grand Trunk Railway, part of the Canadian National Railways. It has about three parts of its great system in the Dominion and the remainder in the U.S.A., **5**, 132

Grand Trunk Road is one of the old great roads of India running from Peshawar to Calcutta, **3**, 315

Grand Union Canal takes traffic from London to Birmingham, Leicester and Nottingham, **3**, 72

Grangemouth, Stirlingshire, is a port on the Firth of Forth. It has a large aluminium works, **3**, 121

Grange-over-Sands. A seaside and holiday resort of Lancashire situated on Morecambe Bay.

Granicus. A river of Asia Minor. Here Alexander the Great defeated the Persians, **2**, 42

Granite is a very hard form of rock containing quartz and feldspar. It may be grey, reddish or white in colour. It is quarried at Aberdeen, in Cornwall and parts of Wales.
Pictures: Granite from Aberdeen, **3**, 125

Granite City is the name often given to Aberdeen, it being a great centre for the export of this stone of which most of its buildings are constructed, **3**, 122

Grant, Duncan (born 1885). A modern British artist whose landscapes and interiors are noted for their rich colouring, **7**, 117

Grant, James (1822–87). English novelist. He wrote *Harry Ogilvie*, *Bothwell* and many other books.

Granta was the name formerly given to the River *Cam* (*q.v.*).

Granth. See *Holy Granth.*

Grantham. Busy industrial town of Lincolnshire and an important junction on the L.N.E.R.

Grant Land is a desolate region of Ellesmere Island off the north-western coast of Greenland, **2**, 358

Granton is a port on the River Forth with fishing interests and docks. It is one of the sea-gates to Edinburgh, **3**, 116

Granule. A small grain. To break up a substance into granules is to granulate it. We use granulated sugar in cookery, and granulated coffee beans for making coffee.

Grape Fruit is included with the citrous fruits. It grows on a tree of the same family as the orange, **3**, 397

Grape Hyacinth is another name for the bulbous plant muscari.

Grape Vines are usually cultivated under glass, though suitable varieties will thrive out-of-doors in warm localities.

Graphic means giving a vivid or clear description. A graphic writer is able to make the reader picture for himself the scenes or happenings that are written about.
Tennyson's *Charge of the Light Brigade* is a very graphic poem.

Graphite is a form of coal in a very pure state. It is used for making pencils, **6**, 5

Grapnel is the name given to a form of anchor having grappling irons for dragging the bed of the sea.
Picture: **6**, 187, 188

Grapple Plant. Native to South Africa the seed-vessels are provided with iron-like hooks, **1**, 351

Graptolites, the earliest extinct marine animals of which we know, **1**, 12
Picture: **1**, 14

Grasmere is the name of a small town and of one of the lakes in the Lake District, where Wordsworth lived, **3**, 88
Pictures: Dove Cottage, Grasmere, **3**, 91

Grass. A section of plant life of much importance to man. It covers the earth with herbage.
—as a protective covering for loose soil, **1**, 42
—blades of grass are leaves, **1**, 291

Grasse is a town on the French Riviera, a great centre for growing flowers and making scent, **9**, 240
Pictures: Grasse, Capital of World Perfumery, **9**, 239
Water for the Flowers, **9**, 240
Harvesting Carnations, **9**, 241
A Girl Worker in a Perfume Factory, **9**, 243

Grass-Eaters. Oxen and sheep are among the grass-eating animals. Such creatures are said to be graminivorous, **1**, 339

Grasshopper. An insect that frequents the fields in summer. It has very long hind legs and can hop considerable distances. Green or brownish in colour.

Grass Snake. A common snake in our own country and quite harmless. It is a fine swimmer, **1**, 146
Pictures: **1**, 147, 148

Grave Accent. A mark, thus `, made over a particular letter to denote stress in pronunciation: cèleri is an example.

Gravel Soil. In a garden sense, soil made up of fine earth, sand and waterworn pebbles, **8**, 271

Gravitation. The force which makes every particle of matter in the universe attract every other particle.
—Newton's Law of Gravity, **7**, 352
—its relation to the weight of an object on the earth and on different planets, **8**, 113
Picture: What a Falling Apple Did, **7**, 353

Gray, Thomas (1716–71). The English poet who wrote the immortal *Elegy in a Country Churchyard* at Stoke Poges, **7**, 139

Grayling. A well known fresh water fish. It is found in English waters and belongs to the salmon family.
Special Colour Supplement: British Fresh Water Fishes, **8**, *between* 256 and 257 (Plate 2)

Gray's Inn. One of the four Inns of Court, on the N. side of Holborn. In the hall, 1555-60, Shakespeare's *Comedy of Errors* was acted in 1594. Many famous men were students here. Charles Dickens was clerk to a firm of attorneys in Gray's Inn.

Great Abaco. See *Abaco, Great.*

Great African Rift Valley is the name given to the deep valley formed by the sinking of the earth's crust to be found in East Africa. Parts of it are flooded forming such long, narrow lakes as Tanganyika, **3**, 370

Great Alexandrian Library was established by Ptolemy, one of Alexander the Great's generals who founded a new kingdom in Egypt. He set up the library in 248 B.C., **2**, 402

Great American Egret. A member of the heron family. Produces in the breeding season the feathers known as ospreys.
Picture: **1**, 168

Great Ant-Eater. A toothless animal living mainly on ants. It is found chiefly in South America, **1**, 116

Great Auk. A bird which was common up to the early nineteenth century and is now entirely extinct. It was of the same family as the guillemot.

Great Australian Bight is an expanse of sea off the south-western shores of Australia, noted for its unpleasant weather, **3**, 219
Pictorial Map, **3**, 242

Great Barrier Reef fringes the Pacific coast of Queensland, Australia, and is one of the wonders of the world. It is 1,250 miles long and consists of intricate coral formations built by tiny sea creatures called polyps, **3**, 228
—it was mapped by Captain Cook, **2**, 312
Pictures: The Great Barrier Reef, **3**, 227
Uncovered by the Tide, **3**, 230
Pictorial Map **3**, 243

Great Bath Road. One of our national roads. It runs from Hyde Park Corner, London, to the G.P.O. at Bath, about 106 miles, through Reading, Newbury and Chippenham. It is A4 in the Ministry of Transport's classification, **5**, 38; **5**, 162

Great Bear Lake is in the North-west Territories of Canada. From the Eldorado mine here, pitchblende ore is obtained from which radium and uranium is produced. Although it is in the far north, the lake is linked by regular air services to the rest of the Dominion, **3**, 162, 166
Picture: **3**, 191

Great Belt, The. This is one of the entrances to the Baltic Sea. Its waters run between the Danish islands of Zealand and Fünen, **4**, 46

Great Bermuda. The largest island in the Bermuda group. On it stands Hamilton, the capital. Great Bermuda is also known as Long Island or Main Island, **3**, 387
Picture: **3**, 387

Great Black-Backed Gull. The largest of the gulls; has pure white plumage, except for a black head and wings. Feet pink, **1**, 202

Great Britain is the name given to

the island kingdom formed of England, Scotland and Wales. The official use of the words date from 1603 when James I united the crowns of England and Scotland and called himself King of Great Britain. Its population exceeds 43 millions.
—Union of England and Scotland (1707), 2, 178
—longest land journey in Great Britain, 9, 309
Great Britain. Name of a steamer designed by Brunel. She was one of the earliest iron steamships, 5, 250
Great Charter. See Magna Carta.
Great Commoner, The. The name given to William Pitt the Elder. See *Chatham, William Pitt, First Earl.*
Great Cullinan is the name given to one of the largest diamonds. It was found in South Africa, 3, 294
Picture: 3, 283
Great Crested Newt. See *Great Newt.*
Great Dane. A large, smooth-coated dog once used for hunting, 8, 315
" Great Divide " is the ridgeline which diverts flowing water on the one hand to the Pacific, and on the other to the east of the Rocky Mountains, 4, 272
Great Dividing Range is the name given to a chain of mountains in Australia. They start in Queensland, reach the borders of New South Wales and extend to the State of Victoria, 3, 230
Great Driffield. See *Driffield, Great.*
Great Eastern was a famous 27,000 ton steamer planned by Brunel. She had a screw propeller as well as paddle wheels. She was employed to lay the first Atlantic cable, 5, 251
Picture in *Photo-tone Supplement*, 5, *between* 272 and 273
Great End is the name of a peak in the Scafell group of mountains. It is 2,984 ft. in height, 3, 90
Great Exhibition. Held in Hyde Park in 1851 it was attended by six million people, 2, 216
Picture, 2, 214
Greater Antilles. A group of islands of the West Indies lying between the Atlantic Ocean and the Caribbean Sea and including Cuba, Hispaniola, Jamaica, and Puerto Rico, 3, 395
Great Fire of London (1666). Began near London Bridge and destroyed the bridge, St. Paul's Cathedral, the Guildhall and Cheapside as well as more than 13,000 houses. The Great Fire is commemorated by the Monument (*q.v.*) which is 202 ft. high, this being the distance of the Monument from the place where the fire began, 2, 169, 408
Great Fish River. See *Back's Fish River.*
Great Fish River. A river of the Union of South Africa. It reaches the Indian Ocean on the Cape Province coast between East London and Port Elizabeth.
Great Gable is a peak in the Lake District, 2,949 ft. in height.
Great Game Reserve is the name given to the part of Kenya Colony where antelopes, zebras, rhinoceroses, lions and other wild animals can live unmolested.
Great Gulf. The name given to a tidal " race " between the Scottish mainland and the islands of Jura and Scarba, 5, 34
Greathead, Henry. He shared with Lionel Lukin and William Would-have the honour of building the first practical lifeboat. See *Lifeboats and Their Crews*, 8, 65
Great Ice Age. A period of history through which Great Britain passed, 1, 10
Great Ice Barrier, in the Antarctic, is the largest known ice sheet in the world, 2, 366, 370
Great Island is in Cork Harbour. Upon it stands Kobh (formerly Queenstown), 3, 152
Great Karroo is the second of the steps or tablelands of South Africa, at a greater altitude than Little Karroo, 3, 286
Great Lakes is the name given to five vast sheets of fresh water that lie between Canada and the United States forming links in the St Lawrence River.
The five lakes are Superior (the largest); Michigan (in United States); Huron, Erie and Ontario, 3, 160, 179
Pictures. Grain Loading, 3, 182
On the Great Lakes, 3, 190
Pictorial Map: 4, 292 and 293
The name *Great Lakes* is also used when reference is meant to the lakes of East Africa south of the upper reaches of the Nile.
Great Maple tree. *See* Sycamore.
Great Mullein. A tall wild plant often found on heathland. It has thick, soft leaves covered with hair and produces a spike bearing yellow flowers.
—as a plant used in making medicines, 1, 333
Great Newt. Known as the Great Crested or Warty Newt, it is 6 in. long and has a warty skin, 1, 158
Picture: 1, 159
Great Northern Diver. See *Diver.*
Great North Road, now known as A1, connects the G.P.O. London with the G.P.O. Edinburgh. It is 393 miles in length and runs through Baldock, Grantham, York and Newcastle-on-Tyne, 5, 38
Great Nullarbor Plain. See *Nullarbor Plain.*
Great Orme's Head, rising nearly 700 ft., is a Welsh headland near Llandudno, 3, 108
Picture: 3, 105
Great Ouse. See *Ouse.*
Great Plain of Europe. This is the low-lying country which includes most of Russia and extends as far as Northern France.
Great Pyramid of Cheops. This remarkable monument stands at Gizeh, near Cairo. It is the tomb of Cheops, an Egyptian king, and was one of the Seven Wonders of the Ancient World.
Pictures: 2, 402; 4, 195; 7, 286
Great Salt Lake is a feature of the State of Utah, U.S.A. The Lake is about 1,500 square miles in area, 4, 273
Great Shunnor Fell. A height in the North Riding of Yorkshire overlooking Swaledale.
Picture: 3, 81
Great Slave Lake is in the North-west Territories of Canada. Yellowknife, on its shores, is a centre for gold and silver mining.
Great Spotted Woodpecker. See *Woodpecker.*
Great Temple was the name given to King Solomon's Temple at Jerusalem.
Great Trek, The (1836). On of the most important events in South African history. The Boers dissatisfied with British rule packed their homes on their trek wagons and journeyed across the Orange river to make new homes in regions which later became the Orange Free State and the Transvaal, 3, 277
Great Wall of China, The. Was begun in 214 B.C. by Shih Hwang-ti, " First Sovereign Emperor." It is some 1,500 miles long and has more than 20,000 towers and 10,000 watch-towers, 2, 402; 4, 227 *et seq.*
Pictures: The Great Wall of China, 4, 223
China's " Long Rampart," 4, 225
Great War of 1914-18 was fought between Germany, the Central Powers of Europe and Turkey, and the Allied nations - Britain, France, Belgium, Italy, Russia, America, and other smaller nations. This terrible conflict, involving a huge loss of life, was fought upon eight " fronts " and ended with the victory of the Allies. It is now usually referred to as the First World War, 2, 234 *et seq.*, 412
Pictures: 2, 236, 237
Great Western was a famous paddle-wheel liner. She made her first crossing from Queenstown to New York in 16 days in the year 1838.
Picture in *Photo-tone Supplement*, 5, *between* 272 and 273
Great West Road. Name of an arterial highway on the west side of London. It runs from Chiswick to Cranford, Middlesex, a distance of eight miles, 5, 42
Pictures: Making the Great West Road, 5, 40
Road tunnel on the Great West Road, 5, 41
Great Yarmouth, Norfolk, is one of the most popular seaside resorts of East Anglia. It is also a centre of herring and other fisheries, noted for its bloaters. Scots lassies come to Yarmouth ever year to deal with the herrings, 3, 60
Pictures: The Drifters make for Port, 8, 71
The Fish-Quay at Great Yarmouth, 8, 73
Great Zab River is a tributary of the river Tigris in Iraq. A dam is being built on the river to divert water to the desert areas to make them fertile, 4, 202
Great Zimbabwe. The name of some remarkable ruins of a large and ancient city in Southern Rhodesia, 3, 300 *et seq.*
Pictures: An African Mystery, 3, 301
Greater Celandine. See *Celandine.*
Grebe. Water-loving bird frequenting the sea at some seasons, though mostly found on lakes and ponds. The best-known of the European grebes is the Little Grebe or Dabchick.

Special Colour Supplement: British Wild Birds (Plate 4), **1**, *between* 160 and 161

Grebe, Black-Necked. See *Black-necked Grebe.*

Greece is a country of south-eastern Europe. It is mainly an agricultural country, but only about a fifth of its land can be cultivated and so food has to be imported. Grain crops, fruit (including currants), and olives are the main products of the primitive agriculture. Sponges and tobacco are also important. The population is estimated at about 7 millions. Athens is the capital, **4**, 157, 362

Greece is often called a "cradle of civilisation" because its ancient artists and thinkers produced so much that has influenced the more recent development of the Western world. Its ancient history contains many famous stories and some of these are recounted in *Tales of the Greeks and Persians*, **2**, 1 *et seq.*

—Greece attacked by Italy and Germany, **2**, 252

—spread of Greek learning in the ancient world, **2**, 402

—Greece becomes a Roman province, **2**, 402

—Greek Art, **7**, 1

—Greek Literature, **7**, 119

Greek Architecture, **7**, 286

—Wise Men of Ancient Times, **7**, 339

See also *Great Nations of the Past*, **9**, 1 *et seq.*

Pictures: Evzones on Parade, **4**, 154

In Ancient Athens To-day, **4**, 155

Two Fishermen of Thessaly, **4**, 156

Legendary Home of the Gods, **4**, 157

Where the Knights of St. John once Ruled, **4**, 158

A Caïque sets sail from Rhodes, **4**, 159

Destroyed by War, **4**, 160

Where St. Paul Landed, **4**, 161

Greek Currants drying, **4**, 353

Special Colour Supplement: In Ancient Greece, **7**, *between* 336 and 337

Green, John Richard (1837–83). Famous English historian. He wrote *A History of the English People*, **7**, 222

Green Cormorant. See *Shag.*

Green Crab. Name sometimes given to the common shore crab, **1**, 238

Greenfinch. Small bird of a greenish hue with grey and brown interspersed. One of the most common of the finches, **1**, 206

Colour Plate: **1**, *between* 160 and 161 (Plate 2)

Greengage. A variety of plum noted for its fine flavour.

Greenheart. Name given to a type of tree that grows in tropical forests, **1**, 322

Greenhithe, a small town of Kent on the Thames. From here sailed Franklin in his attempt to find the North-West Passage, **2**, 303

—it has important paper mills, **3**, 18

Greenhouse. How the glass panes trap heat waves, **5**, 88

Picture: **5**, 86

Green Howards. Name given to the Yorkshire Regiment.

Greenland is a large island off the north-eastern shoulder of Canada. It belongs to Denmark and much of its surface is ice-covered. The inhabitants are mostly Eskimo.

John Davis, the navigator, visited Greenland, **2**, 296; **4**, 47

—explored by Nansen, **2**, 356

—proved an island by Peary, **2**, 358

Greenland Dock, once headquarters of the Greenland whale fishing trade, is the oldest of the London Docks. It is on the same site as the Howland Dock, and became the nucleus of the present Surrey Commercial Docks, **8**, 90

Picture: One of London's First Docks, **8**, 88

Greenland Whale. The type from which whalebone is mostly obtained, **1**, 112

Green Monkeys. One of the commonest of the family, **1**, 102

Greenock, Renfrewshire, is situated on the estuary of the Clyde. It is a centre of ship-building and engineering and has interests in many industries, **3**, 115

Green Point is a promontory of Table Bay in the Cape Province of South Africa. It is a bathing and residential area of Cape Town.

Photo-tone Supplement: Union of South Africa, **3**, *between* 304 and 305

Green River, Wyoming, U.S.A., is really the source stream of the great Colorado river which flows across Utah and Arizona to the Gulf of California, serving as border between Arizona and (1) Nevada, (2) California, and (3) Mexico, **2**, 353

Greensand, a form of sandstone. There is a deposit of greensand beneath London, once the bed of the sea, **1**, 7

Greenshank. A wading bird, grey in colour, but with olive legs from which it takes its name. It is found in Scotland and other parts of Northern Europe, usually by the shores.

Greenwich is now a suburb of London standing on the banks of the Thames. It has long been famous for the Royal Observatory, but this is being moved to Herstmonceux (*q.v.*).

—General James Wolfe is buried here at the church of St. Alfege, **2**, 189

Greenwich Hospital was built as a home for old sailors and was opened in 1705 as a seamen's hospital. Inigo Jones and Wren were the two architects, **7**, 322

Picture: **7**, 322

Greenwich Observatory was established in 1675 for the advancement of astronomy. From here is reckoned the zero meridian of longitude as well as Greenwich Mean Time. The Observatory is being removed to Herstmonceux Castle, Sussex, and when finally established there will be known as the Royal Greenwich Observatory. There will be no change in the prime meridian. The Astronomer Royal is Sir Harold Spencer Jones (*q.v.*).

—founded by Charles II, **2**, 170

Pictures: England's Observatory, **8**, 112

A Star Clock, **8**, 114

Herstmonceux Castle, **8**, 154

England's Biggest Telescope, **8**, 159

Green Woodpecker. The largest member of this family, its plumage is mainly green though the head is surmounted with a red crest. It has a specially long tongue and feet so formed that it climbs trees readily.

Special Colour Supplement: British Wild Birds, **1**, *between* 160 and 161 (Plate 2)

Gregory (540–604). He saw fair-haired children in the slave-market of Rome. Realising that they came from England, he determined that the English should become Christian, **2**, 83

Picture: **2**, 83

Gregory VII (*c.* 1023–1085). Became Pope in 1073 and became involved in many conflicts with rulers owing to his claim to a power superior to theirs. In 1077 he compelled the emperor Henry IV to do penance in the snow for four days. Eventually he was driven from Rome and died in exile, **4**, 73

Grenada is a British island of the Windward Islands in the West Indies. It produces both cotton and cocoa. Its capital is St. George's, **4**, 389

Grenadines is the name given to a group of islands forming part of the Windwards in the West Indies.

Grenfell, Sir Wilfred Thomason (1865–1940). Famous medical missionary of Labrador, **2**, 379

Pictures. One of Grenfell's Patients, **2**, 379

Adrift on an Ice Floe, **2**, 381

Grenoble is a manufacturing town of France. It is also a well-known tourist centre.

Grenville, Sir Richard (1541–91). One of the sea heroes of Elizabethan days. He had a lone fight in the *Revenge* against an entire Spanish fleet off the Azores.

—Buckland Abbey, his home, is now the property of the nation, **3**, 413

Gresham, Sir Thomas (1519–79). A merchant of the City of London. He founded the Royal Exchange and bequeathed money to found Gresham's College, London. See *Royal Exchange.*

Greuze, Jean Baptiste (1725–1805). Son of a carpenter, he became an outstanding French artist. His wife appears in many of his paintings, **4**, 16; **7**, 67

Pictures: Child With Apple, **7**, 68

Fidelity, **7**, 69

Grévy's Zebra belongs to the same family as the true zebra, but its dark stripes are narrower and more numerous, **1**, 94

Grey, Lady Jane (1537–54). The "nine days queen" who was put on the English throne by the ambitious Duke of Northumberland and later executed, **2**, 143, 406

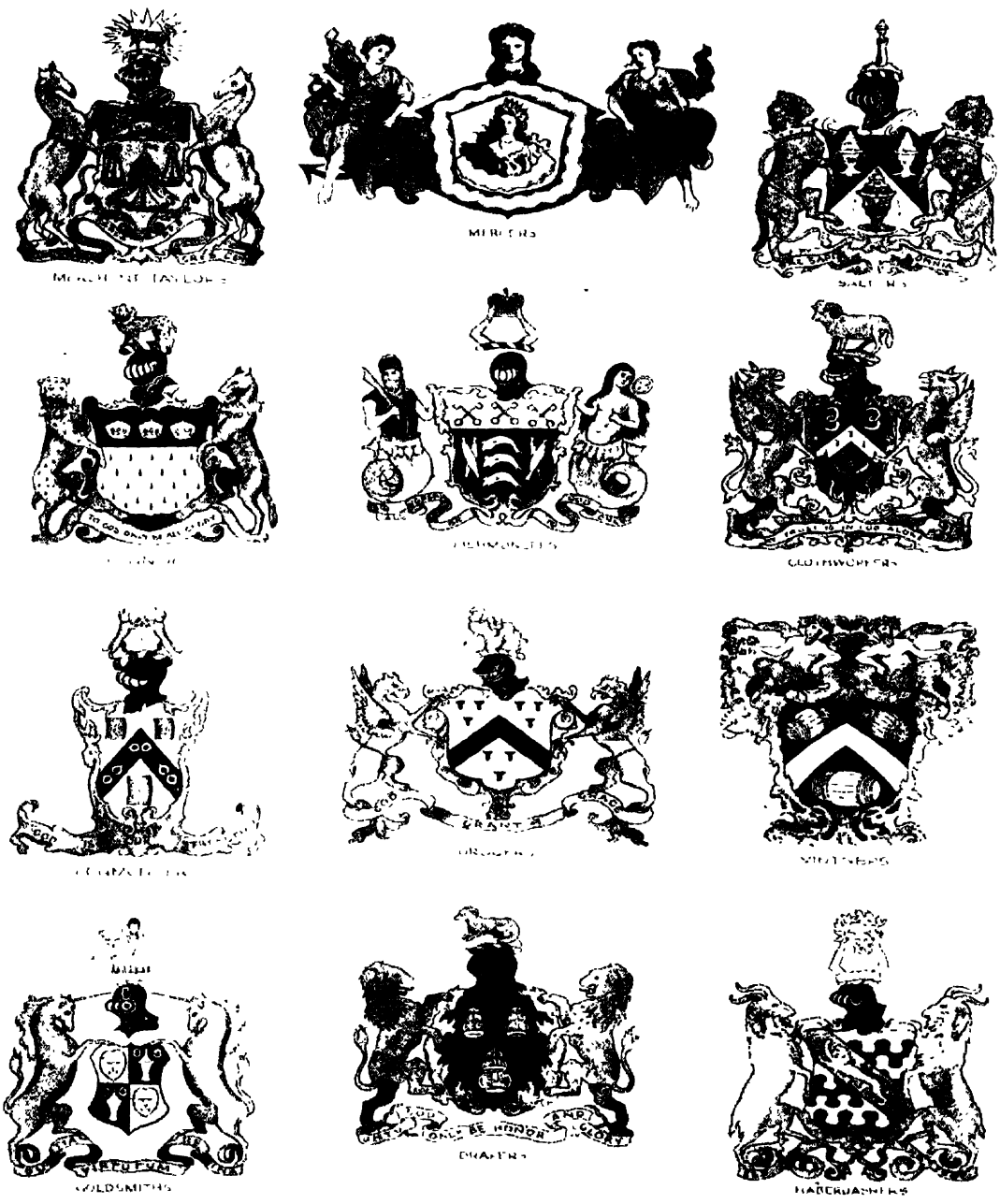
Grey-Green Carp. Wild stock from which goldfish are bred, **1**, 224

Greyhound. A breed of dog noted for its great speed. It is smooth-coated and is used in coursing matches and in dog racing.

Grey Lag. Name of a variety of British wild goose. It makes its nest on the ground.

Greymouth. A port on the west coast of the South Island of New Zealand. It is an outlet for the South Island coalfield, **3**, 256, 264

WORSHIPFUL COMPANIES



Specially drawn for this work.

From the Merchant *guild* (see p. 163) of the Middle Ages is descended the livery company of to-day. The many livery companies of London have their distinctive heraldic signs. Those of a dozen of the most important companies appear on this page. In several of them objects easily recognised as specially suitable have been included. That of the Skinners, for example, displays ermine, the royal fur; that of the Fishmongers, fish. Without barrels, Vintners could not do business, and without sheep there would be no wool for the Clothworkers.

Grey Parrot. The African variety of this bird, said to be the most easily trained and the best talker, **1**, 198

Greytown is a port of Nicaragua at the mouth of the San Juan River. It is also known as San Juan del Norte, **4**, 304

Grid. Name given to a great electrical network covering the whole country. It contains some 3,000 miles of trunk lines, **6**, 304
Pictures: A Maze of Conductors, **6**, 289
"Stepping up" the Voltage, **6**, 304

Grieg, Edvard (1843–1907). A Norwegian musician, he is best known for his piano pieces, **7**, 186
Picture: **7**, 185

Griffin, or Gryphon, is a mythical monster, part lion, part eagle, supposed to represent strength and vigilance. In Persia it was said to be the guardian of treasure and it also appears in Teutonic legends, and it is used in heraldry. The Temple Bar Memorial at the junction of Fleet Street and the Strand is surmounted by a griffin. (*p.h.*)

Grilse is the name given to a young salmon when it first reaches the sea.

Grimaldi is the term applied to an enormous plain on the surface of the moon, 138 miles in diameter. There are two other wide plains, Clavius and Schickard, which are respectively 142 and 133 miles in diameter, **8**, 138

Grimm, Jacob (1785–1873) and Wilhelm (1786–1859), better known as the Brothers Grimm. They were German professors, but wrote a famous book of fairy stories, **7**, 210; **9**, 339
Picture: Rumpel-Stilts-Ken, **7**, 209

Grimsby, Lincolnshire, at the mouth of the Humber, is one of our greatest fishery ports. It became a borough soon after the Norman Conquest, **3**, 84
Picture: Where Grimsby's Fishermen Dock, **3**, 86

Grimspound is the name of a prehistoric village on Dartmoor, **7**, 279
Pictures: **7**, 281, 289

Grindelwald. A holiday centre and district of the Bernese Oberland of Switzerland, **4**, 61

Grinders is the name given to our back teeth, with which we chew food, **8**, 220

Griqualand is a district of the Cape Province in the Union of South Africa. It is divided into two parts, East Griqualand and West Griqualand.

Grison. Name of an animal found in South America. It is a member of the weasel tribe.

Grist is corn which is in the mill ready to be ground into flour. The phrase "to bring grist to the mill" means to be a source of profit or gain.

Grizzly Bear. See *Bear, Grizzly.*

Grizzly Giant. Name given to a tree in California 93 ft. in circumference and 275 ft. high. It is nearly 5,000 years old, **1**, 330

Groat. An English silver coin valued at fourpence. There were also half-groats.
Pictures: **8**, 298, 303

Groats. A coarse kind of meal prepared from oats.

Gromoff is a Soviet airman who flew over the North Pole in 1938, **2**, 365

Groningen. A district of Holland, its interests mainly agricultural. It has a capital of the same name which is a large trading and manufacturing centre.

Groombridge 1830 is the name of a star of the sixth magnitude which is one of the swiftest moving stars. It moves at a speed of 528 miles a second, **8**, 176

Groot Constantia is the homestead of the Government Wine Farm in Cape Province, South Africa.
Picture: **3**, 281

Groote Schuur Estate is an area of spacious parkland where Cecil Rhodes had his home, at Cape Town, Cape Province, Union of South Africa. It contains the University of Cape Town.
Picture: **3**, 277
Photo-tone Supplement: Union of South Africa, **3**, *between* 304 and 305

Gros, Antoine Jean, Baron (1771–1835). Famous French artist. He joined Napoleon's staff and saw much fighting, **7**, 70
Picture. **7**, 71

Grosbeak. Name given to several thick-billed birds, including various kinds of finches. The *Hawfinch* (*q.v.*) is among them.

Gross means twelve dozen. Many small articles, such as screws, nuts, bolts, pens, etc., are sold by the gross. A great gross is twelve ordinary gross.

Grosse Scheidegg. See *Scheidegg.*

Ground Elder. Name given to a troublesome perennial weed, the roots of which should always be destroyed. Sometimes known as Bishop's Weed, **8**, 274

Groundnut. The groundnut is probably better known to us as the peanut. Its great value is that it yields oil which will help to make margarine, cooking oil, soap, and other things which are needed. Groundnuts thrive in British West Africa, in Nigeria, and more recently they have been grown in Tanganyika Territory and other parts of British East Africa, **3**, 372 *et seq.*; **4**, 380
Pictures: Picking Groundnuts in Nigeria, **4**, 371
Threshing Groundnuts, **4**, 375

Groundsel. Familiar wild plant or weed. The flowers form in clusters and the leaves have cut edges. Seeds have silken tufts so that they may be carried by the wind.

Ground Sloth. Name for a Megatherium (*q.v.*).

Grouse. A bird much found in Scotland, on the Yorkshire moors and similar high places. It is one of the "game birds" which are shot and used for food.
Colour Plate: British Wild Birds, **1**, *between* 160 and 161 (Plate 4)

Growler was the name given to the four-wheeled cab that once plied in the streets of London before the taxi-cab took its place.

Grumman Avenger. A type of fighting aeroplane introduced from the U.S.A. and re-named the Tarpon in the Royal Navy.
Picture: **5**, 214

Grumman Wildcat. A fighter aeroplane of the United States Navy, known in the Fleet Air Arm as the Martlet, **5**, 218

Gruyère is a town of Switzerland. It gives its name to the well-known cheese, made from the milk of goats.

Grysbok. Name of one of the antelope groups found in Africa. Only the males have horns.

Guadalajara is the capital of Jalisco state in Mexico. It is a fine and ancient town which was originally one of the Spanish colonial centres, **4**, 297

Guadaloupe is the name given to two islands of the Leeward group in the West Indies.

Guadalquivir. One of the chief rivers of Spain. Its length is more than 350 miles and it flows through Andalusia and empties into the Atlantic, **4**, 136

Guadarrama. This is the name of a mountain system of Spain which runs across the centre of the country in a north-easterly direction a little north of Madrid, the capital. On the south-western slopes of this range stands the remarkable Escorial, built by King Philip II.
Picture: **4**, 130

Guadeloupe consists of two islands in the Lesser Antilles group of the West Indies. They are part of the French Union. The chief town is Basse-Terre, **4**, 18

Guam is an island of the Pacific in the Marianas Archipelago. It belongs to the U.S.A. and is an important naval base, **4**, 294

Guanabara Palace is the residence of the Presidents of Brazil.
Picture: **4**, 311

Guanaco is an animal found in South America. It is a member of the llama family, but is larger and wilder than a llama and provides sport for hunters, **2**, 345; **4**, 336

Guano. The age-long accretion of sea-bird droppings, valuable to farmers as fertiliser, **3**, 228

Guatemala is a republic of Central America with a population of nearly 4 millions. Its chief concern is agriculture, with coffee as the main crop. There are valuable forests. The capital is Guatemala City, **4**, 299 *et seq.*
Pictures: La Antigua, **4**, 301
Lake Atitlan, **4**, 301

Guatemala City is the capital of the Central American republic of Guatemala. It was founded in 1776 after La Antigua (until then the capital) had been destroyed in an earthquake, **4**, 302

Guayaguayare is in Trinidad, in the West Indies, and is a centre of the oil industry.
Picture: **4**, 391

Guayaquil is a large town and seaport of Ecuador, South America.

Guayas. The principal river of the South American republic of Ecuador. It flows from the Andes to the Pacific and is one of the few navigable rivers in the republic.
Picture: **4**, 335

Gudgeon. Small fresh-water fish of which one species is common in British rivers. It is related to the carp and is usually found on the gravelly bed of the stream.
Special Colour Supplement: British Fresh Water Fishes, **8**, *between* 256 and 257

Guelder Rose. A form of Viburnum reaching a height of about 12 ft. It bears large heads of whitish flowers - berries crimson and poisonous, **1**, 344

Guelph. A supporter, during the Middle Ages, of the Pope and house of Guelph against the Ghibellines (see *Ghibelline*) who were finally vanquished by the Guelphic party, **7**, 125
Our own royal house is Guelph by descent, though its name was later changed to Winsdor.

Guelph is a town of Ontario, Canada. Its interests are almost entirely agricultural.

Guereza. Name given to a monkey of the Colobus family living in Abyssinia.
Picture. **1**, 102

Guerilla. This word means literally a little war. It is the name given to an unorganised method of fighting by constant attacks made upon an enemy by small independent bands or groups of fighters.

Guernsey is the second largest of the Channel Islands. It has its own breed of cattle and is noted for its fruits. St Peter Port is the capital, **3**, 52 and 53
Picture Dolmen in Guernsey, **7**, 285

Guest-House. In modern times, a boarding-house or other place where paying guests are received. In olden days that part of a monastery where travellers were received, **2**, 118

Guiana, British. See *British Guiana.*

Guiana, Dutch. A Dutch territory on the north-east coast of South America. Paramaribo is the capital. Rice and oranges are main crops, and bauxite is mined, **3**, 385, **4**, 330

Guiana, French. This overseas department of the French Union is on the north-east coast of South America. Cayenne is its chief town. Gold mining is the most important industry, **3**, 385; **4**, 18, 330

Guide to Good Manners for Boys and Girls. The importance of Courtesy and Politeness, **5**, 417 *et seq.*

Guild. An association or brotherhood of people formed for trade or religious purposes. The old trade guilds of the Middle Ages kept trade very much in their own hands. They included merchants' guilds and craft guilds, the latter having workmen as their members, **2**, 102
Out of the merchant guilds developed the livery companies; and from the craft guilds are descended modern trade unions.
Picture. Worshipful Companies, **10**, 161

Guildford is the chief town of Surrey and has the ruins of an ancient castle. It stands on the Wey, **3**, 33
Picture: Guildford Cathedral, **7**, 326

Guildhall. Such buildings are found in many towns. They were originally meeting places for members of the guilds or trading companies, **2**, 122

Guildhall, London, was damaged in the Great Fire of 1666 and during the Second World War. Lady Jane Grey and other notable figures were tried within its walls which have more recently seen happier occasions such as banquets and other civic ceremonies.
Picture: **3**, 10

Guillemot. A moderately large sea bird that breeds in this country. It uses a convenient hole in the cliff as a nest, **1**, 166, 202
—about its eggs, **1**, 170

Guinea. A gold coin once widely used in this country. It was first minted in 1663, its value being finally fixed at 21s.

Guinea is the name given to the coastlands of West Africa facing the Gulf of Guinea

Guinea Fowls are birds of the pheasant type native to Africa. They have been domesticated and are kept in separate flocks or with ordinary poultry, being much esteemed at table, **6**, 381

Guinea Pig, also known as *Cavy* (*q.v.*), makes an interesting pet. How to house and feed these animals, **8**, 320
Picture. **8**, 317

Guinevere, daughter of the King of Cameliord, was in the legends the wife of King Arthur, **5**, 392
—Glastonbury was her burial place, **3**, 58

Gulf is the name used in geography for a deep indentation in the coastline.

Gulf of Guinea is a deep indentation of the shores of West Africa. It receives the waters of the Niger, **3**, 379

Gulf Stream. A current which issues from the Gulf of Florida at a rate of over 6 miles an hour. It gradually slows down and broadens as it flows north by east parallel with the coast of North America where it merges into the General Drift of warm water towards north-western Europe and is known as the North Atlantic Drift. The prevailing westerly winds from over the North Atlantic Drift bring warmth in winter and moisture in summer to the British Isles and north-west Europe. This is why, in the main, British harbours are ice-free all the year round and the west coast of Norway is free from ice when the Baltic in the same latitude is frozen over.

Gull. A well-known marine bird, of which there are several varieties. Round our coast the Herring Gull is one of the most common, **1**, 202
Pictures Gulls at Home, **1**, 203
Herring Gull, **1**, 204
Iceland Gull, **1**, 204
Colour Plates. **1**, *between* 160 and 161 (Plates and 4)
See also *Seagull*

" Gulli-Gulli " Man is the name given to a street conjuror in Cairo, the capital of Egypt.
Picture: **4**, 197

Gulliver's Travels is a noted book by Jonathan Swift. Originally a satire, it is now regarded as a children's story, **3**, 150; **7**, 202
Picture: **7**, 203

Gum Arabic is obtained mainly from acacia trees, **1**, 334
- most of the world's supply comes from the Sudan, **4**, 197

Gum Benjamin. The sap of a shrub known as the Benjamin Tree from which benzoin is obtained, **1**, 334

Gum Myrrh. A gum obtained from various plants particularly from the balsam, **1**, 334

Gums as used by chemists, *i.e.*, gum arabic, gum myrrh, gum tragacanth, etc., are extracted from various trees and shrubs, **1**, 334

Gum Senegal is a refined form of gum arabic obtained from acacia trees growing in the Senegal district of Africa, **1**, 334

Gum Tragacanth is obtained from the sap of a small bush found growing in Persia, **1**, 334

Gum Trees of Australia are evergreen trees of the eucalyptus family. The jarrah belongs to this group.
Pictures. In Cumberland Valley, **3**, 201
Looking up a Gum Tree, **3**, 206

Gundulf was the name of the Bishop of Rochester in the time of William the Conqueror. Gundulf built part of the Tower of London, **3**, 7

Gun-Metal is a kind of bronze, once used for the casting of cannon. It is a mixture of copper and tin, with, in some cases, a small proportion of zinc. In colour it comes between copper and brass.
Gun-metal is now used chiefly for pumps and certain parts and fittings of engines, **6**, 112

Gunnison. A river of south-west Colorado, U.S.A. Its waters are ingeniously used for irrigation, **5**, 84

Gunny Bags are made from a thick strong cloth produced in India from the fibres of the jute plant, **3**, 347

Gunpowder is made from saltpetre, charcoal and sulphur. It is the oldest known explosive.

Gunpowder Plot (1605) Among its moving spirits was Robert Catesby. With Guy Fawkes and others he planned to blow up the Houses of Parliament on November 5th, 1605. The plot, however, was betrayed, **2**, 157, 407
Pictures. Guy Fawkes and the Gunpowder Plot, **2**, 156
Catesby's Last Stand, **2**, 157

Gurkhas are Indians from Nepal. They make first-class soldiers, **3**, 352

Gurnard. Name of a family of sea fish some species of which are found in British waters. The fins are so developed that the fish can crawl or even walk along the sea bottom

Gurnards, Flying. See *Flying Gurnards*

Gurney, Sir Goldsworthy (1793-1875) An English doctor who became an inventor. He built steam motor coaches which functioned perfectly but were driven off the roads by stupid prejudices, **5**, 162
Picture: Gurney's Steam Carriage and Trailer, **5**, 162

Gurus are teachers of religion in India, especially the holy men of the Sikhs, **3**, 338

Gusher is the name given to a well where the oil bursts through and

rushes into the air before a controlling cap can be fitted, **6**, 310

Gustavus I (1496–1560). A King of Sweden. He built a castle at Vadstena, **4**, 34
Picture: **4**, 38

Gustavus Adolphus. See *Gustavus II.*

Gustavus II (1594–1632). King of Sweden, better known as King Gustavus Adolphus. He was one of the greatest monarchs Europe has known and raised his country to a leading position in the Baltic and in Europe, **4**, 34

Gutenberg, John (fifteenth century) A German, he was born at Mainz. The first man to print from type, **2**, 137

Guthrie, Sir James (1859 1930). Notable leader of the "Glasgow School" this artist became President of the Royal Scottish Academy, **7**, 104, 105, 107
Pictures: **7**, 105

Guthrie, Thomas Anstey. See *Anstey, F.*

Guthrum was the Danish King of Eastern England. He became a Christian and eventually made peace with King Alfred, **2**, 87

Gutta-Percha is the hardened milky juice of an East Indian tree. It is obtained by tapping trees in the same way as rubber trees. Gutta-Percha is very much like rubber in some ways, but is not elastic and is not so hard-wearing as rubber.
It is used chiefly for insulating electrical conductors, and in the manufacture of golf balls and chemical apparatus.

Guzzeh. See *Gaza.*

Gwalior is a large State now linked with other states and in the Union of India peopled mainly by Hindus. Its capital, of the same name, has a great castle in which the mutineers of 1857 took refuge, **3**, 326
Picture: **3**, 128

Gwelo. A town of Southern Rhodesia in the region of which there are important gold mines, **3**, 296

Gyantse is an ancient fortress town of Tibet. The fortress itself is known as the Gyantse Jong.
Picture: **4**, 232

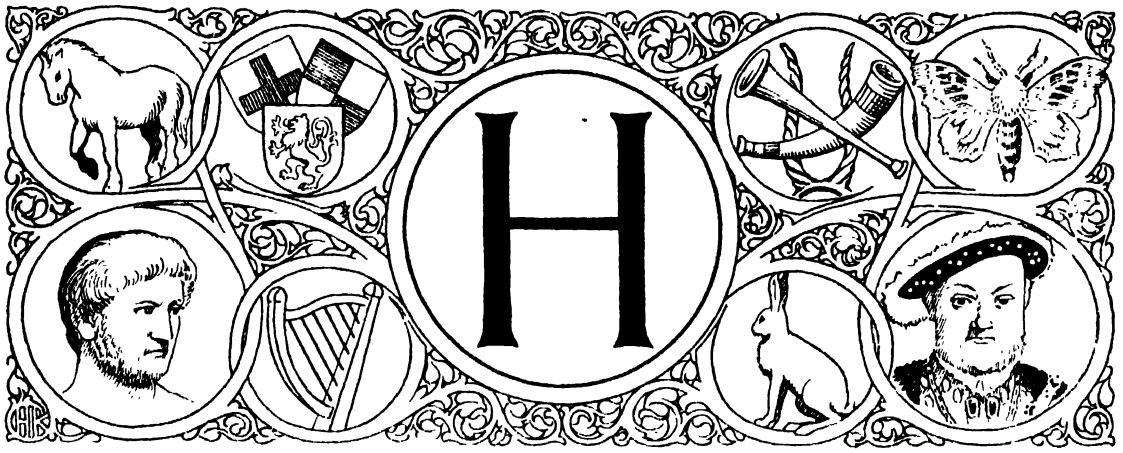
Gymnasium. A building or room filled with apparatus for exercising the body. The early gymnasia (plural) were those of the Greeks, used for athletic exercises, such as wrestling, jumping and throwing the javelin and discus.
A man who took part in them was gymnos (*i.e.*, naked), and from this word such places got their name.

Gypsophila Elegans. Hardy annual plant bearing an abundance of small feathery flowers, **8**, 278

—G. paniculata. The perennial form of gypsophila.

Gyroscope. A heavy disc on an axle mounted in a ring, which is itself pivoted. If the disc is set spinning, and its axis is pressed in at either end, the whole apparatus tends to revolve in another direction. The toy gyroscopic top is able to balance itself on a string and be heeled over without falling. The principle of the gyroscope is used in gyroscopic compasses for ships, and in ship-steadying apparatus. See *Wonderful Tops Which Steer Ships*, **5**, 271 *et seq.*

Gyroscopic Compass. The magnetic compass, long used for steering ships, has now been superseded by a more efficient device known as the gyroscopic compass, which is described in detail in **5**, 271 *et seq.*
Pictures: Old and New Ways of Steering Ships, **5**, 271
The Master Gyro-Compass, **5**, 272
A New Friend for Sailors, **5**, 273
A Quartermaster in Iron, **5**, 274



H is the eighth letter of our alphabet. It does not appear in the Greek alphabet, its place being taken by a " rough breathing," shaped like a comma turned the wrong way round and placed above the letter to which it belongs. But the Greeks used the symbol H to represent the long E sound.

In our language H is included among the aspirants or breathing consonants ; but in a few words, such as " hour " and " honest " it is not sounded. The dropping of H where it should be sounded, and the adding of it before a vowel where it is not wanted, is a not uncommon fault of speech.

In chemistry, H is the symbol for hydrogen. In abbreviations of royal titles it stands for His, Her, or Highness.

H.A. Abbreviation used in seed lists for hardy annuals, *i.e.*, plants of annual duration, **8**, 277

Haakon VII (born 1872) has been King of Norway since 1905. His queen (died 1938) was the third daughter of King Edward VII of Britain, **2**, 248

Haarlem is a city of North Holland, famous for the culture of bulbs, **4**, 19, 31, 354

Habana. See *Havana*

Habbaniya is a lake formed to take flood waters of the River Euphrates and so prevent annual flooding of land in Baghdad, Hilla, and Babylon districts of Iraq. The road from Baghdad via Rutba to Damascus passes near the lake, **4**, 202

Habeas Corpus (*Latin*: thou must have the body) are the first words of the writ so called. The writ is an order to produce a prisoner at a certain time and place to justify his detention. It is one of the pillars of individual liberty and was used as long ago as the twelfth century, and probably before. The Habeas Corpus Act of 1679 strengthened the position against imprisonment without trial, **2**, 170, 408, **9**, 70

Haberdasher. One who sells ribbons, laces, thread, cotton and other small goods of that kind. More often than not, a haberdasher is also a draper. Haberdashers in London have their livery company with its own heraldic sign.

Picture. Worshipful Companies, **10**, 161

H.A.C. stands for Honourable Artillery Company (*q v.*).

Hacienda is a Spanish word meaning a large estate, **4**, 298

Hackle. A stiff bristling hair on a dog's back; a long, shining feather on a cock's neck.

A board set with sharp spikes for combing or pulling out hemp and flax, to separate the tow from the finer fibre, is also called a hackle.

Haddington stands on the River Tyne. It is the centre of a large agricultural district and the county town of the Scottish county of East Lothian.

Haddingtonshire. See *East Lothian.*

Haddock. A fish freely found in British waters. It is related to the cod and ranks as a valuable food fish. **See also** *Finnan Haddock.*

Haddon Hall is one of the most romantic of the ancestral homes of England. It stands between Bakewell and Rowsley, in Derbyshire.

Photo-tone Supplement. Renowned in Romance and History, **2**, *between* 128 and 129

Hadhramaut. A state of Arabia ruled by a Sultan and forming part of the Aden protectorate, **4**, 205

Hadrian's Wall was planned by the Emperor Hadrian (or Hadrianus) about A.D. 112. It extended from the Solway Firth to Wallsend-on-Tyne. Much of this wonderful Roman wall remains today, **2**, 403; **3**, 81

See also *Hadrianus.*

Hadrianus Publius Ælius (76–138) An Emperor of Rome who spent much of his time visiting his vast Empire. He was in England about the year 120, **2**, 403 (*p h*)

—his wall, **3**, 81

Pictures: A Roman Station as it is Today, **3**, 82

Built by the Romans, **3**, 83

Colour Plate: The Building of the Roman Wall, **2**, *facing* 76

Haeckel, Ernst Heinrich (1834–1919). German scientist and philosopher who made a world-wide reputation with his theories regarding evolution.

Hag-Fish. Name given to a group of sea animals that are eel-like in appearance. They are found in British waters.

Haggard, Sir Henry Rider (1856–1925). British author who spent some of his early years in South Africa and used the knowledge he acquired when writing thrilling romances with an African setting. *King Solomon's Mines* is perhaps the best-known, which was followed by its sequel *Allan Quatermaine*, and others, including *She* and *The People of the Mist*, **7**, 241, 271

—he visited the Congo caves near Oudtshoorn in South Africa, **3**, 291

Pictures. **3**, 291, **7**, 242

Haggis is the name of a well-known Scottish dish of ancient origin.

Hague, The. The capital of Holland, it contains the Royal Palace and Parliament House, **4**, 32

Picture: The Hall of the Knights, **9**, 43

Haidar Pasha is the starting point for those travelling by rail from Constantinople to Baghdad. The station is in the Scutari suburb of Constantinople, *i.e.*, on the Asiatic side of the Bosporus, **4**, 200

Haifa. The largest harbour in Palestine and the terminal of one of the great oil pipe lines—these are the qualifications that make Haifa so important, **4**, 186, 200

Picture: **4**, 185

Haig, Douglas, First Earl (1861–1928). Served in the Sudan and South African War. In the War of 1914–18 he was British Commander-in-Chief from December, 1915.

Hail is formed by particles of ice or frozen rain falling from the clouds.

Picture: A Bringer of Hailstones, **5**, 8

Hainault Forest. Name of a woodland in Essex. It is under the care of the London County Council as an open space.

—the Fairlop oak tree, **1**, 332

Haiphong is the chief port of Tonking in the Viet-Nam Republic in Indo-China and the terminus of the French railway which runs into the Yunnan province of China. A new port has been planned at Along Bay because

Haiphong is beginning to silt up, 4, 212

Hairsbreadth. A figure of speech when referring to a minute measurement. Actually, a hairsbreadth is officially a measurement of 1/48th of an inch.

Hair Seal. Name sometimes given to sea lions (*q.v.*).

Haiti is the Negro republic occupying the western third of the island of Hispaniola or Santo Domingo. It is the only republic in the Americas which has French as its official language. Coffee, cotton, sugar, logwood, and cocoa are the main products. Port-au-Prince is the capital, 2, 278; 4, 307 *et seq.*
Picture: 4, 310

Haka is the name which Maoris of New Zealand give to a war dance, 3, 260
Picture: 3, 249

Hake. A fish belonging to the cod family. It is found in British waters, and is an important food fish

Hakluyt (*pron.* Hak-loot), Richard (1552 1616). An Archdeacon of Westminster, he is best remembered for his books on geography and travel on some of which he was assisted by Sir Walter Raleigh.

Hakodate is capital of the Japanese island of Hokkaido, 4, 250

Hakone is the name of a holiday resort in Japan. It is famous for its beautiful lake of the same name and for the Hakone Mountains, 4, 255

Half-hardy Annuals. See *Annuals*

Half Moon was the name of one of the ships of the navigator Henry Hudson, 2, 297
Picture: 2, 299

Half-plate is a size given to cameras, photographic plates and films. It is 6½ by 4¼ inches.

Half-stuff, like thick, rough blotting paper, is the name given to wood pulp paper at one stage of its manufacture, 6, 330

Half-timbered means having walls consisting of a wooden framework, the spaces in which are filled in with brick, which is usually plastered over.

Half-tone is the term used to describe the process of making printing blocks from photographs, wash drawings, etc. Most of the illustrations in these volumes are printed from half-tone blocks, 9, 391
Picture: 9, 390

Halibut. A flat fish and the largest of this family. It may be about 4 ft. in length, 1, 220

Halifax. A town of the West Riding of Yorkshire It is interested in worsteds and woollens and has some of the world's largest carpet factories, 3, 83

Halifax is a town of Canada, capital of Nova Scotia and terminus of the Canadian National Railways. It is a winter sea-gate to the Dominion, 3, 161

Hallam, Arthur Henry (1811–33). A British writer and poet. *In Memoriam* is a tribute paid to his memory by Lord Tennyson, 7, 146

Halley, Edmund (1656–1742). Born at Shoreditch, London, Halley went as a young man to St. Helena to catalogue the southern sky. He became a distinguished astronomer, and was eventually appointed Astronomer Royal. He was the first astronomer to establish the fact of a comet's periodic return, and correctly predicted the dates of the return of Halley's Comet, first observed by himself, 7, 354; 8, 166

Halley's Comet. A comet named after *Edmund Halley,* (*q.v.*).

Hall Marks are stamped upon gold and silver articles to show the purity of the metal in them. There are several "halls" at which this stamping is done, 9, 416

Hall of Honour is part of the Scottish National War Memorial at Edinburgh Castle. In it are the names of all the Scottish Regiments.
Pictures: 3, 119

Hall of Prayer is a famous building in the ancient Chinese city of Peiping (Pekin).
Picture 4, 239

Hall, Sir James (1791–1832). A great geologist and chemist, he explained the condition of the earth's crust by steady progressive changes through the ages.

Haloai is the name given to a seller of sweetmeats in the bazaars of India, 3, 336

Halo, Lunar. See *Lunar Halo.*

Halo, Solar. See *Solar Halo.*

Hals, Frans (1580–1666) Counts among the greatest of the Flemish portrait painters. His "Laughing Cavalier" is one of the world's best-known pictures, 7, 48
Pictures. The Laughing Cavalier, 7, 43
Hals' "Nurse and Child," 7, 44

Halsingborg is the ferry town in Sweden to which the train ferry from Elsinore in Denmark comes thus linking the railway systems of the two countries.
Picture: 4, 45

Halys. River forming the boundary between two countries of the ancient world, Lydia and Persia, 2, 2

Hamadan is a town of Iran (Persia) noted for its carpets, 4, 204

Hamamelis. A pretty shrub which bears yellow tassels in early spring before the leaves appear.

Hamburg. The greatest seaport of Germany. It stands a short distance up the River Elbe. It has a long history as one of the leading Hansa towns and was terribly damaged during the Second World War. Its present population is nearly 1½ millions, 4, 73, 84
—air raids on Hamburg, 2, 254

Hamel, Gustav (1889–1914). A pioneer British airman. He was winner of an air race in 1911

Hamilcar. One of the great generals of Carthage. Father of Hannibal, 2, 63

Hamilton. A city of Ohio, United States of America.

Hamilton. An agricultural town of Victoria, Australia.

Hamilton. An important dairy produce centre in the Waikato valley of the North Island of New Zealand, 3, 263

Hamilton. A town of Lanarkshire, Scotland, having iron and steel works.

Hamilton (Canada). A city of Ontario with steel and iron works and many other industries, known as the "Birmingham of Canada," 3, 195

Hamilton. Capital of the Bermudas, 3, 387
Picture: 3, 387

Hamilton Inlet is a long opening from the sea on the coast of Labrador, 3, 198

Hamm. A heavy industry town of the Ruhr in Germany. It has ironworks, coal-mines and very large railway marshalling yards, 4, 80

Hammerfest, on the north coast of Norway, is visited by tourists who wish to see the midnight sun, 4, 44

Hammer-Head Shark. Its eyes are at the ends of the "hammer."
Picture. 1, 210

Hammer of the Scots. Term applied to Edward I and engraved on his tomb, 2, 115, 404

Hamoaze is the name given to the estuary of the River Tamar, between Devon and Cornwall

Hampden, John (1594 1643). A great statesman and reformer. He refused to pay his share of unjust taxes, 2, 160 *et seq.*
Picture: 2, 164

Hampshire is one of the southern counties of England with a long coast-line to the English Channel. It is famous for the New Forest and for Southampton Water. The Test and Itchen are two of its rivers and within its boundaries come Southampton and Portsmouth On the Hampshire Downs countless sheep are reared. The county town is Southampton, whilst Winchester is noted for its cathedral.
The Isle of Wight is included in Hampshire, 3, 33 *et seq*
Pictures Southampton Docks, 3, 30 31
Queen Mary enters a Graving Dock, 3, 38

Hampshire. Name of the British battleship which struck a mine and sank during a voyage to Russia Lord Kitchener lost his life in this disaster, 2, 236

Hampstead is a favourite residential district of north-west London Its famous open space is known as Hampstead Heath.

Hampton is a town of Middlesex, a residential suburb of Greater London. It contains Hampton Court Palace

Hampton Court Palace was built by Cardinal Wolsey and contains upwards of 1,000 rooms. It was surrendered to Henry VIII by Wolsey and became a royal residence until the time of George III. It stands beside the Thames, 15 miles from London, on the Middlesex side, 2, 174; 3, 25, 7, 316
—it possesses a famous astronomical clock, 9, 224
Pictures 3, 27; 7, 314, 315

Hamster, Golden. A small rodent about 6 or 7 inches long, which has in the last few years become popular as a pet. They need no special food.
Picture: 8, 315

Hancock, Walter, was a pioneer in developing steam-driven vehicles for the roads. He instituted steam road services in London in the early years of the nineteenth century, which

traversed 4,200 miles without serious accident, **5**, 165
Hand is the name we give to that part of an arm below the wrist. Suitable handcrafts help us to train both our fingers and our hands, **8**, 375
Picture: **8**, 375
Hand. Originally the width of a man's hand but now a measure fixed at 4 in. Used for calculating the height of a horse from ground level to withers, *i.e.*, the high part of the back above the shoulder blades.
h. and c. means hot and cold, as applied to water taps.
Handcrafts. The ability to do things with the hands is an important part of our education. As a hobby the making of useful objects is both fascinating and useful. The subject is dealt with under different entries such as Needlework, Embroidery, Weaving, Basketry, etc., and in the section *Handcrafts of Many Kinds.* **8**, 375 *et seq.*
– for young children: first steps in cutting out toys, etc., **9**, 151
Handel, Georg Friedrich (1685-1759). An outstanding musician, he wrote about a dozen operas, many oratorios and several famous anthems He became a naturalised Englishman, **7**, 158
Pictures Handel, **7**, 160
In a State Barge, **7**, 161
Handfork. A garden implement useful for planting out, stirring the soil surface and weeding small beds, **8**, 274
Handicap means an allowance or other condition intended to level up the chances of competitors of different abilities; a disadvantage or hindrance Many different forms of handicap are used in different sports In a foot race it takes the form of a start; in a horse race, of extra weight carried by the horse, in lawn tennis, of a point conceded, and so forth.
Handkerchief Tree. Name given to the Davidia, a tree which produces in May large white flowers like handkerchiefs.
Handley Page. Famous British aeroplane with great weight-lifting qualities, **5**, 200
Handley Page 42 Class Immense biplane air liners, **5**, 204
Han Dynasty ruled China from 206 B.C. until A.D. 221. The Han emperors brought a golden age to China and under their rule learning revived and art and poetry flourished. To this day the Chinese like to think of themselves as " the Sons of Han," **4**, 226
Hangar. Shed for housing aeroplanes. The word was used in France for the barn-like structures with roof and open sides in which carts and farm implements were housed. In the early days of flying in France similar sheds were used to house the aeroplanes. In due course the early aviators of both France and Britain adopted the word and it is now generally accepted for any building in which aeroplanes are housed.
Hangchow is a port and railway town of Chekiang, of which Chinese province it is also the capital. It is the southern terminal of the famous Grand Canal, **4**, 226
Hanging Gardens of Babylon. These were one of the Seven Wonders of the Ancient World, **7**, 292
Picture: **7**, 287
Hanging Stones is the actual meaning of the word *Stonehenge* (*q.v.*).
Hankow is a steel centre and river port of the Hupeh province of China. It is also an important railway centre, providing the link between north and south China, **4**, 241, 243
Hanley, Staffordshire, is part of the Potteries. Besides making china and earthenware, it has coalmines. In 1910 it amalgamated with neighbouring towns to form the municipal borough of Stoke-upon-Trent, **3**, 73
Picture: **3**, 74
Hannay, James Owen (born 1865). A clergyman who became novelist under the pen-name George Birmingham. *Spanish Gold* is one of his best books.
Hannibal (247-183 B.C.). A soldier of Carthaginia, one of the greatest commanders in the history of the world.
—how Hannibal crossed the Alps, **2**, 63, 402
—Hannibal in Italy, **2**, 66
Pictures: Hannibal Swearing Enmity to the Romans, **2**, 63
Marching over the Alps **2**, 64
At the Summit of the Pass, **2**, 65
The Road by the Lake, **2**, 66
The Battle of Lake Trasimene, **2**, 67
Hannibal's Guides, **2**, 68
The Lighted Oxen, **2**, 69
The Carthaginians Press Closer, **2**, 70
Hanoi is the capital of Tonkin and of the Viet-Nam Republic in Indo-China. It is linked by railway to Saigon, **4**, 212
Hanover, in Germany, was once an independent state ruled by an Elector, but in 1866 it became part of Prussia and subsequently a part of Germany. It now forms part of Lower Saxony which is one of the Länder (states) in the British Zone of Germany. Hanover is also the name of the chief town of this former province of Prussia, **2**, 179, 180
Hansa. A Hansa port was one which belonged to the Hanseatic League (*q.v.*)
Hansard, Luke (1752-1828) The printer who began the printing of journals of the House of Commons and gave his name to them.
Hanseatic League is the name given to an association of trading cities in the Middle Ages. It started with commercial centres of Northern Germany and the so-called Hanseatic towns and ports were those within such an association, situated mostly on the shores of the Baltic and North Seas.
At the end of the fourteenth century the League had armies and navies of its own, **1**, 73 *et seq.*
Pictures. In the Old Hansa Town of Lubeck, **4**, 72
The Ancient Town Hall at Torun, **4**, 123
Hansford, Washington, U.S.A., is where the actual content of the atomic bomb was made, **4**, 293, 294
Hansom, Joseph Aloysius (1803-82) An architect whose name is remembered as the designer of the now almost extinct hansom cab.
Hansom Cab. A two-wheeled, horse-drawn vehicle once very familiar in the streets of London. It was invented by an architect named Hansom.
See *Vehicle.*
Hants. means the county of Hampshire.
Hanyang is one of the three cities which together make the city of Hankow in the Chinese province of Hupeh, **4**, 243.
Happy Valley is an attractive feature of Llandudno, **3**, 105 and 108
Hapsburg. This is the family name of the former rulers of Austria at the Austrian empire that existed before the Great War of 1914–18. Hapsburgs ruled Austria and that empire for six hundred years, i.e., from the time that Rudolph of Hapsburg became the Holy Roman Emperor in the thirteenth century until the collapse of the empire as a result of the Great War, **4**, 56, 90
Haram-el-Sherif. See *Temple Area.*
Harbour Grace is a town and port of Newfoundland.
Hardanger Fjord is a deep inlet on the southern coast of Norway It extends to a point more than 100 miles from the open sea
Pictures In a Norwegian Fjord, **4**, 34
Hardicanute. Son of King Canute who divided England between himself and his brother Harold. He also ruled in Denmark and Norway and died in 1042, **2**, 93, 404
Hardinge Bridge is the name of a famous bridge crossing the River Ganges in India, **3**, 348
Hardwar is a town of the United Provinces in the Dominion of India. It is a great place of pilgrimage, **3**, 354
Hard Woods. Description given to the timber of oak, beech, ash, etc., **1**, 322
–less than one-quarter of our sawn timber is cut from hard woods, **1**, 323
Hardy Annuals. See *Annuals.*
Hardy Tin Soldier, The. A Fairy Story for the Little Folk, **5**, 314
Hardy, Thomas (1840–1928). Outstanding English writer and poet. *Under the Greenwood Tree* established his reputation as a novelist, **7**, 223
Hare. A rodent animal, common in the countryside; larger than a rabbit, it does not burrow **1**, 136 (*p.h.*)
—spoor of the hare, **1**, 125
Picture. **1**, 133
Harebell. Small wild plant that produces bell-like blue flowers. It grows on heaths and moors, and is particularly common in Scotland, where it is often called the bluebell
Colour Plate: British Wild Flowers, **1**, *between* 304 and 305 (Plate 4)
Harewood, Earl of. The 6th Earl (1882–1947) married, after distinguished services in the 1914-18 war, H.R.H. Princess Mary (Princess Royal). On his death in 1947 he was succeeded by his eldest son, George Henry Hubert Lascelles, who had been a prisoner of war during the latter part of the 1939–45

war. The 7th Earl married Miss M. D. P. Stein in September 1949.

Harfleur is a seaport and town of northern France a short distance from Havre.

Hargraves, Edmund. A gold seeker who had had experience in the Californian Gold Rush of 1849, he found gold in New South Wales in 1851, **3,** 204

Hargreaves, James (died 1778). British inventor who in 1760 devised an improved carding machine and later built a machine with eight spindles, known as the spinning jenny. With others he revolutionised the cotton and woollen industries despite much opposition, **4,** 344

Harland and Wolff is the name of a famous shipbuilding firm of Belfast, Northern Ireland. They have constructed many of our finest ocean liners, **3,** 146
Pictures: All Ready for the Plunge, **3,** 145

Harlech. A town and holiday resort in Merionethshire. Harlech Castle was built by Edward I, but there had been a fortress here since Roman times. It was an incident in the siege of 1468 which gave rise to the Welsh song of The March of the Men of Harlech, **2,** 112; **3,** 411 *et seq.*
Picture: **3,** 107
Colour Plate: Historic Harlech Castle, **3,** *facing* 92

Harlow. Market town in Essex, and site of new industrial town.
Pictures: **7,** 332

Harmonium. A keyboard wind instrument, in which the tunes are produced by reeds, which vibrate when air is forced through the openings over which they are placed. The bellows are worked by foot-pedals.

Harmony means agreement. There is harmony in a household which is never troubled by quarrels or disputes. Musical harmony is the agreement of notes sounded at the same time. (See also *Music.*)

Harmsworth, Alfred. See *Northcliffe, Lord.*

Harold I (died 1040) was the name of a Danish King of the English. He was a son of Canute and was known as Harefoot, **2,** 404

Harold II (1026-66). A King of the English, after being Earl of Wessex. He was slain in the Battle of Hastings, **2,** 93 *et seq*; **2,** 404
Picture: The death of Harold, **2,** 95
The Bayeux Tapestry, **9,** 342-3

Harold Hardrada. King of Norway, who supported Tostig's claim to the English throne in 1066, **2,** 93

Haroun-al-Rashid (763-809) was a famous caliph of Baghdad, **4,** 200
Picture: **4,** 204

Harp. The harp is one of the oldest of stringed instruments, and its beautiful tones are produced by plucking with the fingers. The simple harp of ancient Egypt probably had its origin in the tense string of the hunter's bow. It was used by the Greeks and Romans, and from early times had been held in veneration by the Welsh and Irish. It was used by the bards and handed down from father to son. The most modern form is the "double-action pedal harp," fitted with pedals by which the pitch of each string can be raised by a tone or semitone. It is used very effectively in the orchestra and in chamber music.
See *Musical Instruments.* (*p.h.*)

Harp, The (or Lyra) is the name of a group or constellation of stars.

Harpagus, a servant of Astyages, King of the Medes and Persians, **2,** 6

Harpsichord. This is a keyboard instrument resembling the piano, which has largely taken its place. The strings are plucked by quills or pieces of hard leather, instead of being struck by hammers as in the pianoforte, and the tones so produced are very brilliant. The great musician *Bach* composed music for this instrument, and a harpsichord which he used was preserved in a museum at Charlottenburg, Germany.

Harrier. (1) Name given to a breed of dog. The animals are used for hunting hares.
(2) A bird which lives largely in marshy districts. It is a species of hawk.

Harrington Sound. A stretch of water in the Bermudas where it is possible to see the underwater life in the setting of its natural home, **3,** 387

Harris, Air Chief Marshal Sir Arthur (born 1892). The officer of the Royal Air Force who first planned heavy raids on German cities, **5,** 220

Harris is the name given to a district of the island of Lewis. Here the crofters weave Harris Tweed, **3,** 140
Picture: **6,** 357

Harrisburg, a manufacturing city and commercial centre, is capital of the State of Pennsylvania, U.S.A.

Harris, Joel Chandler (1848-1908). An American lawyer and editor. He will be best remembered as author of the negro stories, *Uncle Remus—his Songs and Sayings,* **7,** 224
Pictures From "Uncle Remus," **7,** 225

Harrismith. A town of the Orange Free State, in the Union of South Africa. It has a considerable woollen industry.

Harrogate, in the West Riding of Yorkshire, is a famous inland spa and health resort.

Harrow, Disc. See *Disc Harrow.*

Harrow-on-the-Hill is a residential town of Middlesex. It is famous for its boys' school.

Harrows are used on our farms for breaking down ridges and smoothing ground, as well as for covering in seed, **6,** 383

Harte, Francis Bret (1839-1902). An American writer, best remembered for *The Luck of Roaring Camp.*

Hartebeest. Name of the largest member of the antelope family. It may stand 5 ft. high at the shoulders.

Hartog, Dirck was a Dutchman who visited Shark Bay, Western Australia, in 1616, and left there a tin plate on which he had cut a record of his visit. There is now an island in Shark Bay named after him, **3,** 200

Hartford, a town of many industries, is capital of the State of Connecticut, U.S.A.

Hartlepool, which includes West Hartlepool, is a town and port of County Durham. It has engineering and heavy industries, including shipbuilding.

Hartshorn. What is called spirits of hartshorn is water charged with ammonia

Harun-al-Rashid. See *Haroun-al-Rashid.*

Harvard University is the senior university of the United States of America. It was originally founded at Cambridge, Mass., just outside Boston, by some Cambridge graduates who gave it the name of their own university. Then John Harvard (1607-38), an Englishman who had been educated at Emmanuel College, Cambridge but settled in America in 1637, left half his estate to the college which had been named Cambridge. This college was renamed Harvard and became a university when medical and other schools were added. There are over 5,000 students today.
Picture: **4,** 281

Harvest is the term generally used on our farms for the cutting of the cereal crops, *i.e.*, oats, wheat and barley, **6,** 389
Pictures The Farmer's Boy—Modern Version, **6,** 379
Getting in the Harvest, **6,** 387
There's Joy in the Harvest, **6,** 388
In the Stack Yard, **6,** 394
A Wiltshire Barley Harvest, **6,** 395
Reaping in the Modern Manner, **6,** 396
Building up Stooks, **6,** 397
Gathering the Harvest of Wayside Crops, **6,** 398

Harvesting Ants. Insects which clear ground and grow crops of ant rice. Their home is in the tropics, **1,** 270

Harvest Mouse. The smallest of British animals, *Mus minutus,* it would be balanced in scales by a penny.
Picture. **1,** 138

Harvey, William (1578-1657). Born at Folkestone, he joined the staff of St. Bartholomew's Hospital, London. Wrote a famous book about his conclusions that "the blood performs a kind of circular motion," *i.e.*, circulates, **7,** 356
Picture: **7,** 355

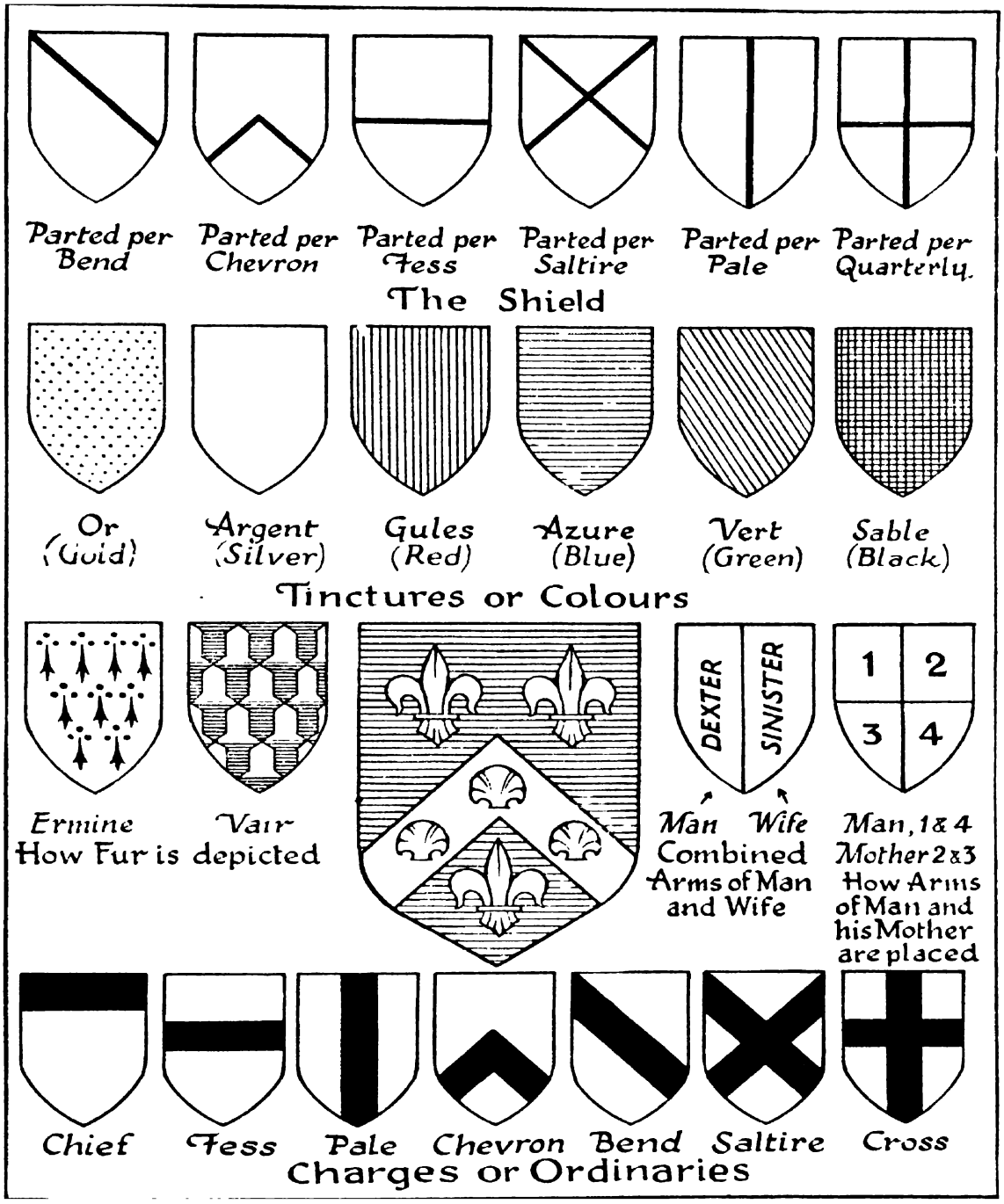
Harwich (Essex) is a naval station and extensive port. From here mail steamers leave for continental countries and there is a train-ferry (for goods only) to Zeebrugge, **3,** 59; **4,** 69
Picture: **3,** 64

Harz Mountains are a range of mountains in Germany. They form a natural bastion in the north German plain about midway between Cologne and Berlin, **4,** 84, **85**

Haslemere is a town and residential district of Surrey within easy reach of Hindhead.

Haslingden is a cotton and industrial town of Lancashire.

HERALDRY: COATS OF ARMS



Specially drawn for this work.

The earliest beginnings of *Heraldry* (see p. 172) go back to remote ages when tribes and individuals adopted some distinguishing symbol. As a science, resting on hereditary descent, it owes much to the Third Crusade (1139-1192) when the Crusaders had their Arms painted on their shields. In this drawing the terms used in naming the devices for Coats of Arms are shown. The Blazon (description) of the Coat of Arms in the centre of the page is: Azure, on a Chevron Argent, three Scallop Shells between three Fleur-de-Lys Or.

Hastings, Sussex, seaside resort; one of the Cinque Ports. St. Leonards is included within the Borough. Battle of Hastings fought near by, 1066, **2,** 94; **3,** 36
Pictures: Landing of the Norman Duke, **2,** 93
The Battle of Hastings, **2,** 95
The Submerged Forest **1,** 10

Hastings, Warren (1732–1818). One of the greatest of British administrators in India. He became Governor of Bengal. In 1788 he was impeached for corruption but was acquitted.

Hatfield is a town of Hertfordshire, on the River Lea.

Hathaway, Anne (1556-1623). The maiden name of the wife of William Shakespeare. She lived at Shottery, near Stratford-on-Avon, **3,** 70
Pictures: Anne Hathaway's Cottage, **3,** 70

Hatra is a ruined city of Mesopotamia. It stands in the desert south-west of Mosul and long ago was a city of the Parthians.
Picture: **4,** 199

Hatshepsut (sixteenth century B.C.) A Queen of Egypt, she was the first great woman in history and believed to be the one who saved Moses from the Nile.

Hatteras is a prominent cape of the State of North Carolina, about half-way down the Atlantic seaboard of the U.S.A., **3,** 387

Hatto II, a Bishop of Germany, is associated with the story of the Mouse Tower of Bingen and is said to have taken refuge there against a swarm o rats. He lived in the tenth ce tury, **4,** 70

Hauraki Gulf, in the North Island of New Zealand, has at its head Waitemato Harbour and the city of Auckland, **3,** 264, 266

Hausa is the name for a Native of Northern Nigeria The purest Hausa strain is in the Emirates of Kano, Sokoto, Katsina, and Zaria. Hausas are traders, artisans, farmers, and possess remarkable skill in textiles and leatherwork.
Picture: **2,** 323

Haute-Savoie is a department of France noted for its scenery.

Hautes-Pyrenees. A district of France which includes part of the Pyrenees Mountains. There is some mineral wealth, but this department has also agricultural interests, much fruit being grown.

Havana is the capital of Cuba and the chief port of the republic. It is a magnificent city and is a noted pleasure resort, **4,** 306, 389
Picture **4,** 309

Havelock, Sir Henry (1795–1857). One of the heroes of the Indian Mutiny, he recaptured Cawnpore from the rebels and relieved Lucknow.

Haverfordwest is a town of Pembrokeshire, South Wales. It has an ancient castle.

Havre, at the mouth of the River Seine, is the second port of France. It builds ships and has many industries. There is a regular steamer service to and from Southampton. Also known as Le Havre.

Hawaii is the largest of the Hawaiian Islands. See *Hawaii, Territory of.*

Hawaii, Territory of. This is the official name of the Hawaiian islands which belong to the U.S.A. They were once known as the Sandwich Islands and were discovered by Captain Cook. Honolulu, on the island of Oahu, is the capital. Sugar and pineapples are the main crops, **2,** 314; **4,** 296
Pictures. Killed in a Skirmish, **2,** 316
Hawaiian Pineapples, **4,** 289

Hawes Water is the name of one of the lakes in the English Lake District. It sends water to the city of Manchester.

Hawfinch. In some districts a winter visitor and in others a permanent bird resident. Feeds largely on haws or berries. Often known as the Grosbeak.

Hawick, Roxburghshire, is a town on the River Teviot noted for its tweeds or twills and hosiery, **3,** 112

Hawk. Name of a family of small birds of prey. The group includes sparrowhawks and goshawks.

Hawke Bay is a broad bay of the east coast of North Island. There are sheep farms in the picturesque country around the Bay.
Colour Plate. Amid the Beauties of New Zealand's Sheep Farms, **3,** *facing* 276

Hawke, Edward, 1st Baron (1705–81) British sailor, born in London, he entered the Navy in 1720 and rose to Vice-Admiral in 1749 His greatest exploit was the defeat of the French at Quiberon Bay in 1759, regarded as the greatest naval victory since the Armada. He became Admiral of the Fleet in 1768 and was made a baron in 1776, **8,** 8

Hawker, Robert Stephen (1804-75). An English clergyman and poet, he wrote *Shall Trelawny Die?* He also introduced into his Church the Harvest Festival service now widely adopted.

Hawkins, Sir Anthony Hope (1863-1933). Using the pen-name Anthony Hope, this well-known English writer produced *The Prisoner of Zenda* and a number of other novels.

Hawkins (or Hawkyns), Sir John (1532-95). Famous English sailor, born at Plymouth. After many adventures at sea, partly as a slave-trader, he became M.P. for Plymouth and treasurer and comptroller of the Navy, being responsible for many improvements.
On the coming of the Armada, 1588, Hawkins became Rear-Admiral in command of one of his own ships, the *Victory,* and rendered valiant service for which he was knighted. Later in 1595 he sailed under Drake's command to the Spanish Main again, but died of fever and was buried at sea, **2,** 150; **3,** 380; **8,** 3

Hawkins, Sir Richard (1562–1622). Only son of Sir John Hawkins (*q.v.*). Elizabethan sea captain, who took part in the defeat of the Armada and sailed round the world in his ship *The Dainty.*

Hawk Moth. Large moth with poir ted wings and torpedo-shaped body. The largest British moth of this type is the Death's Head Hawk Moth. (*p.h.*)

Hawksbill Turtle. The creature from which tortoiseshell is chiefly obtained, **1,** 114

Hawkweed, Mouse-Ear. See *Mouse-Ear Hawkweed.*

Haws. Name given to the familiar red berries borne on hawthorn trees, **1,** 306

Hawser. A stout rope or wire cable used for mooring or towing a ship. It usually consists of three or four strands twisted together.

Hawthorn. May attain to the size of a tall tree, but is also seen as a hedging plant when it is known as Quick. Another name is May tree, **1,** 338, 344, 411
Pictures: Hawthorn Berries, **1,** 347
Hawthorn Tree, **1,** 416

Hawthorne, Nathaniel (1804–64). Considered one of the greatest of American novelists. He wrote *The House of the Seven Gables.*
Photo-tone Supplement. United States of America, **4,** *between* 272 and 273

Hay is long grass cut, dried and made into a rick so that it may mature as fodder for farm animals, **6,** 386
Pictures: Last Load Home, **6,** 389
The Mechanical Elevator, **6,** 389

Hay, Ian See *Beith, Sir John Hay*

Haycocks are heaps of cut grass as set up in a hayfield to hasten the drying process, **6,** 387

Haydn, Franz Joseph (1732–1809) An Austrian composer of immense genius. His *Creation* stands out as his greatest work, **7,** 162
Pictures: Haydn Plays One of His Compositions, **7,** 162
A Musician Crosses the Channel, **7,** 163

Hayes Barton. Village near Budleigh Salterton, Devon. The birth-place of Sir Walter Raleigh in 1552.

Hayling Island is a holiday resort of Hampshire noted for its fine sands.

Hayti. See *Haiti*

Haywards Heath is a country town of Sussex

Hazel. A tree which is more frequently found as a bushy shrub, but in favourable conditions will develop into a small tree. Some varieties are cultivated for the nuts which are known as Cob and Filbert nuts as distinct from the wild variety, Hazel nut, **1,** 305, 406
Picture **1,** 407

Hazelrigg, Sir Arthur, was one of the "five members" (of Parliament) whose arrest was intended by King Charles I but who escaped before Charles and the soldiers reached the House of Commons, **2,** 161

Hazeras. This is the name of a people of Central Asia, **3,** 340

Hazlitt, William (1778-1830) Well-known English essay writer He wrote about poets and humorous writers and his work *Table Talk* showed him as a critic, **7,** 210

h.c.f. means, in arithmetic, highest common factor.

H.E. means His Excellency or His Eminence.

Head Injuries often produce concussion. The treatment is rest, quiet and sleep and one should send urgently for the doctor, **8,** 242

Headlamps, as fitted to a motor car, have their rays caught by a reflector and so bent all in one direction, **5,** 100
Pictures: Lights Without Reflectors, A Light in Harness, **5,** 98
Healing Plants. Various forms of plant-life from which medicines are obtained, **1,** 332
Healsville is a town of Victoria, Australia, not far from Melbourne. Here can be seen one of the finest collections of Australian flowers and shrubs growing in their natural setting, **3,** 234
Health, Good. The history of the fight for good health by doctors and scientists, **7,** 379 *et seq*
Heard Island is over 3,000 miles southwest of Melbourne, Australia, and in 1948 became a base for the Australian National Antarctic Research Expedition (*q.v.*), **3,** 244
Photo-tone Supplement "From Spray Ridges to Crystal Fairyland," **2,** *between* 368 and 369
Hearne, Samuel, was one of the early pioneers in the service of the Hudson Bay Company. He was a great traveller and between 1769 and 1772 made no less than three journeys to the Barren Lands He was the first white man to see the Arctic from Canada, **3,** 158
Heart. This may best be described as a powerful muscular organ containing two separate receiving chambers and two separate pumping chambers It causes the blood to circulate along its proper channels, **8,** 214
Pictures: The Circulation of the Blood, **8,** 215
What the Heart Does, **8,** 217
Heartsease is a common name for the pansy and for the wild form of this plant
Heat is a form of motion transmitted by means of heat waves The important subject of Heat is dealt with under *Fire* (*q.v.*)
Heather. A shrub growing on moors, heaths and similar places It bears purple flowers which yield honey
—when planted in New Zealand, **1,** 337
Colour Plate: **1,** *between* 304 and 305 (Plate 1)
Heath Row in Middlesex is the site of the London Airport, the largest in this country. Many of the B.O.A.C. passenger and transport planes begin their flights from here, and when finally completed it will be one of the finest airports in the world, **3,** 14
Picture. **5,** 224
Heat Strokes are caused by long exposure to sun heat. In first aid, treat as for shock, keeping the patient lying down. Provide warmth and give hot fluids to drink, **8,** 242
Picture: **8,** 232
Heber, Reginald (1783–1826). An English bishop who gained fame as a writer of hymns Perhaps the best-known of them is *From Greenland's Icy Mountains*
Hebrides is the name of two groups of islands off the west coast of Scotland There is the Inner Hebrides group and the Outer Hebrides, **3,** 138 *et seq.*
Pictures: Over the Sea to Skye, **3,** 137
The Cave of a Warrior Hero, **3,** 138
The Holy Island of Iona, **3,** 139
Hecateus (550–476 B.C.) was a great traveller in Grecian times He wrote a "Journey round the world," giving an account of the comparatively small "world" known to him, **9,** 19
Heckmondwike is one of the textile towns of the West Riding of Yorkshire.
Hedgehog. A small animal of the countryside, its body covered with brown-banded spines, **1,** 130
—the spoor of the hedgehog, **1,** 124
—as a pet, **8,** 320
Picture **1,** 130; **2,** 317
Hedgehog Holly is a garden shrub, *Ilex Aquifolium.* The surface of its leaves are prickly as well as the edges
Hedge-Sparrow. A small bird to be found in gardens and near hedgerows, it lines its nest with hair, moss, wool and grass, **1,** 166
Colour Plate **1,** *between* 160 and 161 (Plate 1)
Hedge-Warbler. Name sometimes given to the *Hedge-Sparrow* (*q.v.*).
Hedge Woundwort. A wild plant that may reach the height of 3 ft. or even more. Its leaves grow in pairs and the flowers are similar to those of the dead nettle, of a reddish colour.
Hedin, Sven Anders (1865–1952) Swedish author who travelled widely He explored and wrote about the Gobi Desert, Tibet and many other places
Hedjaz is a desert district of Arabia on the shores of the Red Sea, forming part of the kingdom of Saudi Arabia (*q.v.*), **2,** 382
(*Sometimes spelt Hejaz*)
Hedley, William (1779–1843) A British engineer and inventor He built the famous locomotive engine "Puffing Billy," **5,** 122
Colour Plate: "Puffing Billy," **5,** *facing* 128 (Plate 1)
Heidelberg, standing on the River Neckar, is an old university town in the state of Baden, Southern Germany. The University dates from 1386, and is widely known as a seat of learning As a young man, King George V was for a short while at Heidelberg, **2,** 230, **4,** 70
Heine, Heinrich (1797–1856) A well-known German poet though he spent many years in France as correspondent for German papers
Hejnal is the name of the trumpet call which is sounded from the tower of St. Mary's Church, Cracow. Seven hundred years ago, this call was sounded to give warning that Tartar invaders were approaching Before the trumpeter could finish his call, he was killed by a Tartar arrow. So today, when the call is sounded it ceases at the same point as it did seven hundred years ago when it was first blown.
Picture **4,** 125
Hekla is one of several volcanoes in Iceland. It exceeds 5,000 ft. in height.
Helena, with great mineral interests, is capital of Montana, a State of the U.S.A.
Helensburgh is a town and holiday centre on the Firth of Clyde. It is in Dumbartonshire.
Helianthus. This is the family name of sunflowers, both the annual and perennial groups
Helichrysum. A hardy annual plant bearing brightly coloured flowers like double daisies. These may be dried and preserved, and are often called "Everlasting Flowers."
Picture: **8,** 273
Helicon. Like Parnassus, Helicon is a famous mountain of ancient Greece. Both mountains overlook the Gulf of Corinth on its northern side. They were believed to be the favourite haunts of the Muses, **4,** 158
Helicopter. A flying machine able to lift and support itself by airscrews on the upper ends of upright shafts. Such a machine is able to rise almost vertically from a very confined space, "hover" without moving forward, and descend vertically
Another example of this type of machine was the Cierva Autogiro, but the true helicopter has been much improved and is now in use by the big Airways companies It is also in use by the Post Office and for crop spraying.
Pictures: Fighting Battles Against Crop Pests, **1,** 389
The Bristol Helicopter, **5,** 236
Heligoland was a strongly fortified German island in the North Sea until 1946, when British occupying forces demolished the fortifications.
Heliograph. An apparatus for sending signals by flashing the sun's rays from a mirror It includes a sighting-arm by means of which it can be "trained" exactly on the place to which the signals are to be sent In signalling, the mirror is tilted by a key, which brings it into and out of the flashing position, **5,** 100
Picture **5,** 103
Heliopolis. A city of ancient Egypt and the original site of Cleopatra's Needle.
Picture. **3,** 22
Heliotrope. A half-hardy plant often known as "Cherry Pie" and grown for the fragrance of its blossoms
Helium is a gas, an element (symbol He) discovered by Sir William Ramsay in 1895. Excepting hydrogen, it is the lightest gas known, being seven times lighter than air
As it will not burn, it is ideal for airships; but its use for them is limited by its scarcity and the cost of preparing it, **5,** 187
Hellespont. Name given in ancient days to the Dardanelles (*q.v.*).
Helmholtz, Ludwig Ferdinand von (1821–94). Son of a Potsdam schoolmaster, he made discoveries about nerve cells, the formation of the eyes, the nature of the ears, and wrote a complete study of sound, **8,** 115, 120
Helsingfors, capital of Finland, is now known as *Helsinki* (*q.v.*).
Helsinki is the capital and principal seaport of the Republic of Finland. It is the centre of government and has many industries and manufactures, **4,** 50
Picture: **4,** 48
Helston. An ancient town of Cornwall built on two hills It is noted for its Flora Day festival when the "Furry Dance" is held.

Helvella. A form of toadstool found in the fields, **1**, 360
Helvellyn, in the English Lake District, is 3,118 ft. in height.
—title of a famous poem by Wordsworth, **3**, 88
Helvetic Republic was the name of the Swiss state formed by Napoleon. When he fell from power, the nations of Europe accepted a form of federation, which the Swiss themselves had prepared, and pledged themselves to respect Swiss neutrality, **4**, 56
Hemans, Mrs. Felicia Dorothea (1793–1835). An English poetess, she wrote *Hymns for Childhood* and *Lays of Leisure Hours.*
Hematite is a type of iron ore. It is reddish in colour when reduced to powder; hence its name, derived from the Greek word for blood. It is one of the most valuable kinds of iron ore, and contains up to 70 parts in 100 of iron, **6**, 42
Hemicyclopsis. An extinct fish.
Colour Plate: **1**, *facing* 36
Hemisphere means one half of a sphere or globe. The earth is regarded geographically as divided into northern and southern hemispheres by the Equator
When we speak of the eastern and western hemispheres we mean the parts of the earth's surface on which are the Old World and the New World, respectively.
Hemlock. A plant from 3 ft to 5 ft. in height, its hollow stem blotched with purplish spots. Produces heads of small white flowers. The plant contains the poison conine. Many common root vegetables belong to the hemlock family, **1**, 348; **8**, 244
—Socrates was condemned to drink hemlock, **7**, 346
Picture: The Last Discourse of Socrates, **7**, 339
Hemlock, Canadian. See *Canadian Hemlock.*
Hemlock, Water. See *Water Hemlock*
Hemming is the usual method of finishing off an edge of material when sewing, **8**, 407
Picture: **8**, 408
Hem-Stitching is a feature of embroidery work Silk thread should be used on a silk material and linen on linen, **8**, 416
Picture: **8**, 415
Henbane. A wild herb having toothed leaves and bearing yellow flowers tinged with red.
—the black berries are poisonous, **1**, 344; **8**, 244
Hendon is a town of Middlesex and a residential centre It is noted for its aerodrome, **5**, 205
—The Metropolitan Police School is at Hendon, **9**, 79
Picture: Policemen in the Making, **9**, 79
Hengist and Horsa. Two brother Anglo-Saxons who invaded south-east England about the year 450, **2**, 82, 403
Henley, William Ernest (1849–1903). An English poet, he was associated with Robert Louis Stevenson. His poems *For England's Sake* and *The Song of the Sword* are well known.
Henley-on-Thames. Ancient market town of Oxfordshire, famous for its annual regatta.
—Sir Frank Crisp's rock garden there, **1**, 363
Henley Regatta. An amateur fixture connected with Oxford and Cambridge Universities and Eton College. It is held annually in July, **3**, 25
Henrey, Robert. A present-day author, whose book *A Village in Piccadilly* is quoted, **2**, 396
Henrietta Maria (1609–69). Daughter of King Henry IV of France and queen of King Charles I. She was known as "The Unhappy Queen," **2**, 160
Henry I (1068–1135). King of England, he reigned for thirty-five years. His only son William was drowned whilst returning from France, **2**, 97, 404
Henry II (1133–89), King of England and the first of the Plantagenets. He restored order in the country mainly by curbing the power of the barons It was owing to hasty words spoken by him that Thomas à Becket was slain, **2**, 100 *et seq*, 404
Pictures: The Barons Deprived of Power, **2**, 98
The Plot against à Becket, **2**, 99
The Martyrdom of Thomas à Becket, **2**, 101
Henry III (1207–72) He succeeded his father King John and was crowned at Gloucester with a plain gold band. He was weak and foolish, **2**, 107, 404
Pictures His Coronation, **2**, 107
The Smith and Hubert de Burgh, **2**, 108
An Earl Defies his king, **2**, 109
Henry IV (1366 1413), son of John of Gaunt. First King of the House of Lancaster, **2**, 129, 404
Henry V (1388–1422). Eldest son of Henry IV. He made the most serious effort to enforce the English claim to the throne of France, **2**, 129, 404
—he imprisoned his stepmother, **3**, 36
Picture: Henry V at Agincourt, **2**, 131
Henry VI (1421–61). The only son of Henry V. He was only a year old when he succeeded to the throne, **2**, 135, 404, 406
Henry VII (1457–1509), King of England. Henry Tudor, he married Elizabeth of York and so united the rival Roses.
—his claim to the English throne, **2**, 136
– defeats King Richard, **2**, 136, 406
the Middle Ages ended in this reign, **2**, 127
—hesitates to help Columbus, **2**, 275
Coloured Frontispiece: The Age of Discovery, Vol. 2
Henry VIII (1491–1547). King of England. In the early years of his reign he was guided by Wolsey. He was married six times, **2**, 140 *et seq.*, 406. (*p.h.*)
Picture: Cardinal Wolsey and Henry VIII, **2**, 141
Henry III was Holy Roman Emperor from 1039 until 1056. During his reign the palace at Goslar in Germany was built, **4**, 85
Henry IV, Holy Roman Emperor, reigned from 1056 until 1106. He defied the Pope and was excommunicated. To redeem himself he went to Canossa, where Pope Gregory VII was, and did penance (1077), **4**, 73
Henry, George. Well-known Scottish artist, he was a member of the Glasgow School. He has painted much in Sussex, **7**, 105, 107
Picture: **7**, 108
Henry, Joseph (1799–1878). Passing a current through a mile of copper wire in 1831, he produced an audible signal by the ringing of a bell and in some respects anticipated Faraday. He discovered, too, the essential features of wireless telegraphy.
Henry, O. (1862–1910). Greatest of American short story writers. His real name was William Sydney Porter.
Henry of Portugal, Prince, (born 1394). He gave great encouragement to early exploration and navigation to such an extent that he is known as "the Navigator." **2**, 286, 406; **4**, 137; **8**, 26
Henslow, John Stevens (1796–1861). A professor at Cambridge and a great English botanist, his influence enabled Charles Darwin to take part in the voyage of the *Beagle*, **2**, 342
Henson was the name of a coloured man who assisted Commander Peary in the conquest of the North Pole, **2**, 360
Henty, Edward (1809–78) was the first permanent settler at Port Phillip, Victoria, Australia. He settled there in 1834 with a few cows and domestic animals, **3**, 232
Henty, George Alfred (1832 1902) At first a journalist, he took to writing stories for boys He produced some eighty volumes
Hera was a goddess of Ancient Greece, occupying the same position as did Juno with the Romans, **5**, 359
Heraklion, sometimes known as Candia, is one of the chief towns on the Greek island of Crete. Not far from the town is the great Palace of King Minos, parts of which date to times before 3000 B.C.
Picture. **4**, 161
Heraldry is the science of Crests and Armorial Bearings. The beginning of the practice of using coats of arms is lost in antiquity, but it became an established custom during the Crusades.
In this country the College of Arms or Heralds College is the official repository of the Arms and pedigrees of English, Dominion and Colonial families. A right to Arms can only be established by the registration in the official records of the College of Arms of a pedigree showing direct descent from an ancestor entitled to arms, or by a special Grant of Arms. (*p.h.*)
Picture: Heraldry: Coats of Arms, **10**, 169
Herat is one of the chief towns of Afghanistan and there are deposits of chrome ore and oil in its neighbourhood, **3**, 340
Herbaceous Perennials are garden plants that die down in the autumn

and come up afresh every spring, **8**, 278

Herbalist. A person who makes collections of wild plants; a dealer in plants used for making medicines. Hermits in olden times often became herbalists, through studying the healing properties of the simple plant-life among which they dwelt

Herbarium is the name given to a collection of plants or herbs that have been preserved, **2**, 347

Herb Bennet. Another name for *Common Avens* (*q.v.*).

Herbert, Sidney, Lord (1810 1861) An English minister after whom the Herbert Hospital at Woolwich is named.
Picture: **2**, 217

Herbivorous means eating grass and other forms of vegetation. Cattle, sheep, horses and deer are some of the herbivorous animals.
Their teeth are suitable for grinding, and not for seizing and rending like those of flesh-eating animals

Herb Paris. A wild plant with four large leaves from which springs a strong stalk. The shining black berries are poisonous, **1**, 344

Herb Robert. Name of a familiar hedgebank plant, one of the wild geraniums, **1**, 306

Herculaneum was a town of Roman Italy on the Bay of Naples overwhelmed by lava from Vesuvius A.D 79. The ruins have been partly uncovered, **2**, 403; **4**, 152
Picture: **4**, 145

Hercules was a mythical hero of the ancient world who was supposedly possessed of great strength. Among his many adventures was a search for the golden fruit of the Garden of the Hesperides. These are thought to have been the kind of oranges we know as Tangerines, a name derived from the Moroccan port of Tangier.
He was the son of Zeus, and even as a baby became famous for his strength of body by strangling two serpents sent to kill him, **5**, 85
Picture: **4**, 129

Hercules, Pillars of. Term applied to great rock masses at the entrance to the Mediterranean. That on the north is Gibraltar. On the African coast comes Ceuta.

Herdsman, The (or Bootes) is the name of a constellation or group of stars.

Herdwick is the name of a breed of sheep kept in the fells of Cumberland and Westmorland, **3**, 90

Hereford is the county town of Herefordshire. It is the centre of a great agricultural district and is noted for its fine cathedral which contains a chained library, **3**, 39; 102

Herefordshire. A county of western England noted for its fruit, cattle and agricultural products. Its chief river is the lovely Wye and it contains the Malvern Hills.

Heretic. One who follows a heresy; that is, a belief out of keeping with established religious beliefs. In the Middle Ages burning at the stake was the usual punishment for heretics.
The Martyrs' Memorial at Oxford was erected in honour of Bishops Ridley and Latimer, who were burned on a spot close by in 1555, for holding what were considered to be heretical opinions.

Hereward. Leader of the English, he resisted the Normans. Known as the Wake or the Watchful, **2**, 94; **3**, 66

Herford, Oliver (1863-1935). A cartoonist and humorous writer. Many volumes of light verse were illustrated with his own drawings.
Poem: The Elf and the Dormouse, **9**, 116

Herkomer, Sir Hubert (1849-1914). Born in Bavaria, he came to England as a child and attained great fame as an artist, **7**, 102

Hermann. See *Arminius*.

Herminius. A companion of Horatius at the keeping of the bridge at Rome against Lars Porsena, **2**, 52

Hermit. A person who of his own choice lives apart from his fellow men. The word is used especially of one who chooses a solitary life in order to shun the temptations of the world and devotes himself to meditation on holy things.

Hermitage Castle was once a stronghold of the Douglases The ruins are to be found in Liddesdale, Roxburghshire.

Hermit Crab. Name given to a type of small crab which lives in the empty shell of the whelk or similar gastropod They are found on the coasts of Europe, including Britain, America and West Indies.

Hermon, Mount, is a peak of the Anti-Lebanon Mountains in Syria. Its snow-capped summit is more than 9,000 ft. high, **4**, 174

Herne Bay, Kentish seaside resort eight miles from Canterbury, **3**, 36

Hero was a citizen of Alexandria who lived in the first or second century B.C. He was the first man to make use of the power of steam, **5**, 116
Picture: **7**, 347

Herod Antipas was the son of Herod the Great, and became governor of Galilee and Peraea. It was at the instigation of his wife, Herodias, and his daughter, Salome, that John the Baptist was executed. He died in exile in A.D. 44, **2**, 402

Herod the Great (74-4 B.C.) became King of Judea under the Romans in 40 B.C. According to St. Matthew it was Herod who ordered the massacre of all infants in Bethlehem to ensure that the prophecy concerning the birth of Christ should not be entirely fulfilled and that there should be no rival to Herod as King of the Jews, **2**, 402

Herodotus (fifth century B.C.). The Greek historian to whom the modern world owes much of its knowledge of early Greece, **2**, 402; **7**, 120; **9**, 1
Colour Plate: Herodotus, Early Traveller and Historian, **2**, *facing* 68

Heroes of the Antarctic. See *Antarctica.*

Heron. A somewhat rare bird to this country; related to the crane and the stork, **1**, 166
Picture: **1**, 165

Herrenvolk. A German word meaning "Master-race," much used by the Nazis who believed that Germans were superior to all other peoples, **2**, 246

Herrera, Francisco He was art master to the Spanish painter Velazquez, **7**, 55

Herrick, Robert (1591 1674). A Londoner by birth, he became a clergyman in Devon where he wrote the delightful lyrics that have made his name so well known as an English poet.

Herring. One of the most important food fish, it is found in British waters at certain seasons, **8**, 77

Herring, A. M. A pioneer of aviation. He built a double-deck glider, **5**, 184

Herring-Bone, in embroidery, is worked from left to right on two parallel lines, **8**, 416
Picture: **8**, 415

Herring Gull. A large sea-bird with pink legs and pearly-grey wings, tipped black, **1**, 202

Herring, Red. See *Red Herring.*

Herschel, Sir John (1792 1871). Son of Sir William Herschel, he continued the work of his father. Taking his instruments to the Cape, he observed 1,202 double stars, 1,708 nebulæ, the Milky Way and Halley's comet
—his experiments as to the heat of the sun, **8**, 120

Herschel, Sir William (1738-1822). Born at Hanover he became a concert director at Bath. Becoming interested in astronomy, he made himself a master in the making of telescopic mirrors. The general result of his work had an important bearing on the evolution of astronomy. He discovered the planet Uranus, **8**, 155, 178

Herschel's Planet. Name given to *Uranus* (*q.v.*).

Herstmonceux. A small town in Sussex, 12 miles N.E. of Eastbourne. It is famed for its Castle, built in the fifteenth century. The Royal Observatory is being removed from Greenwich to this Castle, the first stage being completed in 1948.
Picture: **8**, 154

Hertford is the county town of Hertfordshire. It contains Christ's Hospital girls' school with Haileybury College but a short distance away. The history of the town goes back to King Alfred.
Photo-tone Supplement: Modern Architecture (Hertford County Hall), **7**, *between* 288 and 289

Hertfordshire. A county of southern England. It contains the Rivers Lea, Stort and Colne and one portion of the Chilterns. Market-gardening is included with other agricultural industries and there are vast areas under glass. Paper-making is another of its industries.
Picture: Unchanged by Time, **3**, 79

Hertz, Heinrich Rudolf (1857-94). A native of Homburg, he supplied full verification of Clerk Maxwell's theory of free electric waves. He showed that electric waves correspond to the waves of heat and light. A pioneer of wireless, **6**, 199; **7**, 372

Hervey's Islands are in the South Pacific and were discovered by Captain Cook, **2**, 314

Hesperides were the female guardians of the golden apples which, according to ancient legend, Earth gave to Juno at her marriage with Jupiter. The apples were said to be kept in the Garden of the Hesperides which was at one time said to be in the vicinity of Tangier, North Africa, **4**, 129

Hesperus was the name given by the ancient Greeks to the planet Venus when it appeared as an evening star. When it appeared in the morning it was known as Phosphorus, **8**, 141

Hessian. A material like sacking. It is made from the fibres of jute How to make a shopping bag of hessian, **8**, 389
Picture: **8**, 389

Heterophylia. A fungus which has a crayfish flavour when cooked. Also known as Blue Cap, **1**, 360

Hevea Brasiliensis is the botanical name of the tree from which rubber is obtained. It is a native of the Amazon Valley, **6**, 319

Hever Castle, near Edenbridge, in Kent, is famous as having been the residence at one time of Anne Boleyn.
Photo-tone Supplement: **2**, *between* 128 and 129

Heysham is a seaport on Morecambe Bay, Lancashire. It maintains regular steamer services to Northern Ireland and the Isle of Man, **3**, 86; **3**, 131

H.H. means His (or Her) Highness.

H.H.A., when used in a gardening sense, means half-hardy annual, *i.e.*, a tender plant of annual duration, **8**, 277

Hibernate means to pass the winter in sleep or retirement. Some animals always hide themselves in secluded spots for the winter, having fed well before retiring.
Dormice, squirrels and tortoises hibernate, other creatures being partial-hibernators, coming forth during spells of mild weather.
—when tortoises hibernate, **8**, 324

Hiddekel is the name given in Genesis to the river we now know as the Tigris, **3**, 199

Hide. A measure of land to which reference is made in Domesday Book. It was about 120 acres in area, **2**, 96

Hierro is one of the *Canary Islands* (*q.v.*).

Highland Brigade is one of the ships of the Royal Mail Line employed on the service between London and the South American ports.
Picture in *Photo-tone Supplement*, **5**, *between* 272 and 273

Highland Gatherings, when the clansmen meet, are usually held in the late summer. They are of ancient origin and the programme provides for sports and dances.
Pictures: **3**, 130–133

Highlands of Scotland fill the greater part of our sister country north of a line from the Firth of Clyde to Stonehaven, **3**, 124
Pictures: Glen Nevis, **3**, 123
A Gem of the Highlands, **3**, 126
Where the Clansmen Gathered, **3**, 127
The Laggan Dam, **3**, 128
Climbers of the Cobbler, **3**, 129
A Highland Gathering, **3**, 130
Piping and Dancing, **3**, 131
Throwing the Hammer, **3**, 132
Other Feats of Strength, **3**, 133
In the Scottish Highlands, **3**, 134

Highland White. Name of a popular breed of small, active dogs. They are descended from the Aberdeen Terrier, **8**, 315

High Place is the name of one of the historic ruins at Petra in Trans-Jordan.
Picture: **4**, 190

High Sheriff of a county is the Crown's principal law officer in that county. He is appointed by the King from names put forward by the Lord Chancellor, the Chancellor of the Exchequer and the Judges, **8**, 44

High Veld is the name given to the rich grassland country of the Orange Free State and Transvaal in South Africa, **3**, 286, 289

Highway Code. A code of rules for the guidance of motorists, cyclists, pedestrians and other road-users, issued by the Ministry of Transport. The strict observance of these rules would reduce the number of road accidents which are a tragic feature of this age of motoring.
Pictures : For Safety on our Roads, **9**, 81
Learning the Safety First Rules, **9**, 83
The Highway Code, **10**, 175

High Wycombe is a town of Buckingham lying to the south of the Chiltern Hills. It is a furniture manufacturing centre, **3**, 18

H.I.H. means His (or Her) Imperial Highness.

Hildenborough is a small town of Kent, near Tonbridge. Cricket bats are made here.

Hildesheim. A town of central Germany, formerly noted for its old half-timbered buildings, These were completely destroyed during the Second World War, **4**, 79

Hill, Miss Octavia (1838–1912). One of the founders of the National Trust which preserves for us our places of historic interest and natural beauty, **3**, 406

Hill, Sir Rowland (1795–1879). Celebrated as the originator of penny post, which was abandoned during the war of 1914–18 and has not since been restored, **2**, 214

Hillary, Edmund P., a New Zealander who was a member of the 1953 Everest Expedition under Col. Hunt He and his Sherpa companion, Tensing, reached the summit on May 29th, 1953, **2**, 390

Hillier, Tristram. A well-known British artist who loves every detail, and gives it strong light and shade and its own bright colour.
Photo-tone Supplement: The Mendips, **7**, *between* 112 and 113

Himalayan India is the name given to one of the main regions into which the sub-continent may be divided geographically, **3**, 312

Himalayan Spruce. A coniferous tree brought to Great Britain from India. Its cones may be 6 in. in length.
Picture: **1**, 293

Himalayas is the name of the loftiest range of mountains in the world. They stretch along the northern frontier of India, **3**, 332
Pictures: Crowned with Eternal Snows, **3**, 351
A Pillar-box in the Wilds, **3**, 352
Tea for Britain and the World, **4**, 357

Himmler, Heinrich (1900–1945). He was the notorious head of the Nazi Storm Troops (S.S.) and secret police (Gestapo) in Hitler's Germany. After his arrest by British troops, he killed himself, **2**, 254

Hinaidi Aerodrome is near Baghdad, the capital of Iraq and is used by air liners on the route to India, **4**, 202

Hind. The female of the stag

Hindenburg was the largest airship ever constructed. She crossed the Atlantic in 59 hours, but was destroyed by fire in 1937, **5**, 187

Hindenburg Line. A system of German defences stormed by the Allies during the Great War (1914–18) and named after a famous German commander of that war, **2**, 240

Hindenburg, Paul von (1847–1934) German field-marshal who played a prominent part in the war of 1914–18 and was subsequently President of the German Republic, **2**, 237, 240, 412

Hindhead. Place in Surrey famous for the near-by beauty spot the Devil's Punch Bowl.
Picture: **1**, 336

Hindu. One who believes in Hinduism, which is one of the great religions of India. There are many different castes, or classes, of Hindus, and many different religious sects, having a great number of different gods and goddesses, **3**, 319

Hinduism is one of the great religions of India, **3**, 318 *et seq.*

Hindu Kush is a range of mountains of central Asia to the north-east of Afghanistan They were visited by the fourteenth century traveller Ibn Batuta, **2**, 271

Hinny. A cross-bred animal having a horse as its father and a donkey as its mother. Such a creature would be inferior to a mule, **1**, 95

Hinterzarten is a township in the Black Forest region of south-western Germany.
Picture: **4**, 74

Hipparchus (about 130 B.C.) A famous Greek astronomer. He made a catalogue of 1,080 stars, **8**, 174, **7**, 334

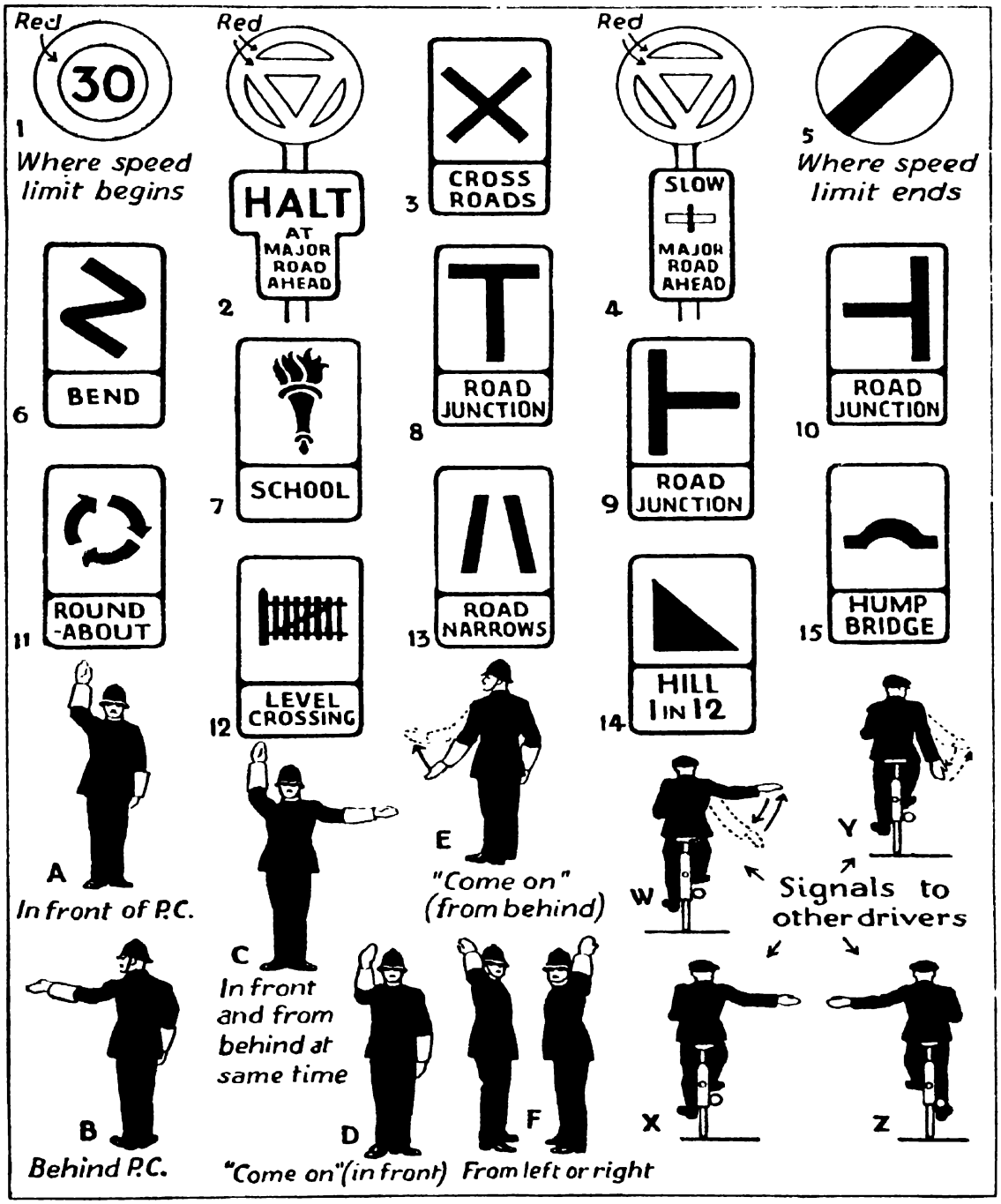
Hippocrates (460–377 B.C.). The Greek physician who saved Athens from a pestilence and was rewarded with a golden crown, **7**, 379
Picture. **7**, 379

Hippopotamus. A giant of the animal world. The name is Greek for "river horse" and the creature has strong teeth and tusks, **1**, 71
Pictures: Jaw Found Near Cambridge, **1**, 33
Mother and Baby, **1**, 61
Far from the Zoo, **1**, 71
The Hippo Yawns, **1**, 74

Hips. Name given to the berries of the dog rose and other plants. Rich in food value, the berries are made into preserve, **1**, 306

Hiram was a famous King of Tyre. His tomb may still be seen near Tyre, on the coast of Lebanon, **4**, 174

THE HIGHWAY CODE



Specially drawn for this work

It is of the highest importance in these days of fast-moving motor traffic that everyone should know the *Highway Code* (see p 174). There are various signs along the roads to warn motorists and the majority of these explain themselves. The signals given by the police, A, B and C indicate "Stop!" while E, D and F are signalling "Come on". The cyclist W is signalling that he is going to slow down or stop, Y indicates that he can be overtaken, X and Z are signalling the way they are going to

Hirohito (born 1901) is Emperor of Japan. The Japanese consider him to be a descendant of the first emperor, Jimmu, who is supposed to be descended from the Sun Goddess. The Emperor's full title is "Imperial Son of Heaven of Great Japan," **4**, 248

Hiroshima. A city of Honshiu, Japan, is situated at the head of a bay on the south coast of the island. It was a highly important transport base during the wars of 1914–18 and 1939–45. Population, 344,000. The first atomic bomb ever used in warfare fell on the city on August 6th, 1945, and destroyed it, **2**, 258; **7**, 401
Picture: **4**, 254

Hirschberg is a town in Silesia which is now part of Poland.
Picture: **4**, 124

Hispaniola, meaning Spanish Land, was the name given by the Spaniards to the island now containing Haiti and the Dominican Republic, **2**, 278; **3**, 395; **4**, 307

Histon is a township of Cambridgeshire which has fruit plantations and jam factories, **3**, 69

Historian. A writer of history. Among the earliest historians whose writings remain to us were the authors of the Books of Samuel and Kings in the Old Testament, who lived probably in the seventh century before Christ.

Historic means famous in history. The signing of Magna Carta, the Battle of Waterloo, the opening of the first steam railway, and the discovery of the New World by Columbus were all historic events of different kinds.

Historical and Commemorative Stamps. Postage stamps which recall some great events.
Pictures: **4**, 407

History is the record of the past and is concerned with events and personalities and the story of how nations and communities progressed or failed. In its written form History begins with Herodotus (*q.v.*) and there have been many great historians since then. Among famous historians in fairly recent times may be mentioned Edward Gibbon (1737–94), Lord Macaulay (1800–59), N. T. Buckle (1821–62) and in our times G. M. Trevelyan (born 1876). See *The Romance of History*, **2**, 1 *et seq.*; *A Journey Through the Centuries*, **2**, 401 *et seq.* Also list of *Historical Stories for Boys and Girls*, **7**, 274

Hitler, Adolf (1889–1945). By birth an Austrian, he founded the Nazi Party in Germany and made himself dictator of that country. He plunged Europe into war in 1939 and died in Berlin, amidst the ruin that he had brought his people, **2**, 242, 246, 412; **4**, 77, 78, 86
Picture: **2**, 414

Hittites. A group of peoples who inhabited Asia Minor and N. Syria in Biblical times. They were conquered by the Assyrians in the eighth century B.C.

H.L.I. means Highland Light Infantry.

H.M.A.S. means His Majesty's Australian Ship.

Hoatzin. A bird of the Amazon Valley. See *Ama.*

Hobart, on the River Derwent, is capital of Tasmania. It is a centre for the many island industries, including the apple orchards near the city, and ocean-going vessels use its fine harbour, **3**, 234, 235
—its settlement, **3**, 204
Picture: **3**, 238
Pictorial Map: **3**, 243

Hobart National Park is in Tasmania and is one of the beauty spots of the island state, **3**, 235

Hobart Town was the old name for Hobart, Tasmania (*q.v.*), **2**, 366

Hobbema, Meindert (1638–1709). He was born at Amsterdam and ranks as one of the great Dutch Artists, **7**, 52
Picture: **7**, 52

Hobbes, John Oliver. The pen-name of Mrs. Pearl Mary Theresa Craigie (*q.v.*).

Hobby. A bird belonging to the Falcon family. It arrives in England early in May and usually nests in southern counties, but is occasionally found as far north as Yorkshire and Cheshire. Graceful in shape, the full-grown birds are slate-grey on the upper parts and reddish coloured on the lower under parts, with upper part of the chest reddish white boldly streaked with black. It is about a foot in length. In September the Hobby migrates overseas.

Hobby is the term applied to any occupation or subject that is not one's chief occupation, but is done as a relaxation. The subject is dealt with under different headings in *Favourite Hobbies*, **8**, 245 *et seq.*
See also separate entries such as *Angling, Photography, etc.*

Hoboken is a town of New Jersey, U.S.A. It stands on the Hudson River and has many industries.

Hobson Bay is on the south coast of Victoria, Australia and is within easy reach of Melbourne. It has beautiful bathing beaches, **3**, 232

Hobson, Captain, was the first Governor of New Zealand. He was ordered to carry out the annexation of New Zealand under the Treaty of Waitangi (1840). He set up his capital at Auckland, **3**, 252

Hockey. An outdoor game played between teams of eleven players, positioned as in association football. Hooked sticks and a white leather ball are used. It became a recognised game in this country about 1883 and in 1886 the Hockey Association was formed, **2**, 222; **9**, 401
Picture: Measurements of Our Playing Fields, **9**, 405

Hodgson, Ralph (born 1871). Modern English poet, he wrote *The Last Blackbird*, **7**, 156

Hoes are most useful garden tools. They serve to keep the soil surface loose and to destroy weeds, **8**, 274

Hofer, Andreas, was a Tyrolese innkeeper who headed a revolt against the Bavarians in 1805. He was executed by Napoleon's order in 1810. **9**, 326

Hoffman, Ernst Theodor Wilhelm (1776–1822). A German composer of music and also a writer.

Hoffman Square is in Bloemfontein, the capital of the Orange Free State. It contains a memorial to those who fell in the war of 1914–18.
Picture: **3**, 302

Hogarth, William (1697–1704). An English painter who drew attention to the follies of his age in an immense number of brilliant pictures, **7**, 75
Picture: The Beggar's Opera, **7**, 75

Hogg, James (1770–1835). A Scottish poet, best known as the "Ettrick Shepherd." His reputation is second only to that of Burns.

Hogweed is another name for *Cow Parsnip* (*q.v.*).

Hohenzollern is the family name of the former Kings of Prussia and Emperors of Germany. There was a bridge at Cologne named after them. They were buried in the Protestant Cathedral in Berlin.

Hokitika is a town on the west coast of the South Island of New Zealand, **3**, 256

Hokkaido is one of the main islands forming the Empire of Japan. Hakodate is its capital, **4**, 250

Hokusai (1760–1849). One of the greatest artists of Japan.
Picture: **7**, 102

Holbeach House, near Dudley in Staffordshire, was where Catesby, one of the leaders of the Gunpowder Plot (1605) was killed, **2**, 157

Holbeach Scheme is a project by which land is being reclaimed from the sea in the Wash, **3**, 68

Holbein, Hans (1497–1543). One of the greatest of German painters, his portraits are the most remarkable feature of his work. He came to England in 1526, **7**, 34
Pictures. "The Ambassadors," **7**, 36
Merchant of the Steelyard, **7**, 37
The King's Falconer, **7**, 38

Holbrooke, Josef (born 1878). Prolific and notable British musical composer, **7**, 191

Holdsworth, Mrs. G. L. See *Stern, G. B.*

Holiday. A day or period of freedom from work. Originally the word was spelt "holyday," and meant a day set apart for religious observances. Holydays were given up more and more to merrymaking, and by the time the spelling had changed the religious meaning of the word had probably fallen into the background.

Holi-Puja is a religious festival held in parts of India, **3**, 332

Holland is a district of Lincolnshire.

Holland is a kingdom of Europe, also known as the Kingdom of the Netherlands, and has Belgium to its south and Germany on its east. It is primarily an agricultural country and is noted for its dairy produce and its bulbs. It also has many manufactures, and a coalfield in the province of Limberg. The Hague is the capital, and Amsterdam is the chief commercial city. The population is nearly ten millions, **4**, 19 *et seq.*, 353 *et seq.*
—invaded by Germany, **2**, 248
Pictures: Windmills Drain the Rich Farmland, **4**, 19
Skating in Holland, **4**, 25
An Old Dutch Toyseller, **4**, 27
Santa Claus on Horseback, **4**, 28
Fisherfolk of the Netherlands, **4**, 29

An Old Lady from S'Hertogenbosch, 4, 30
A Girl of Southern Holland, 4, 31
Here Forty-Two Bells Ring Out, 4, 32
Photo-tone Supplement: The Continent of Europe, 4, *between* 112 and 113
Colour Plate: In the Harbour of Marken Island, 4, *facing* 60

Holland, New. See *New Holland*

Holles, Denzil, Lord, was one of the "five members" (of Parliament) whose arrest was intended by King Charles I but who escaped (1642), 2, 161

Hollinger Mine is a famous gold-mine on the Porcupine Goldfield of the Canadian Shield, 3, 166
Picture. 3, 164

Holly. An evergreen shrub, which may become a tree and reach a height of 30 ft. or more. Originally known as Holm, it has pale-grey bark. It is often used for Christmas decoration, 1, 344, 414; 8, 244
Pictures: Holly Berries, 1, 352
Holly Tree, 1, 415

Hollyhock. Tall perennial plant with showy blossoms suitable for the back of borders. It has been grown in English gardens 350 years. There are single and double varieties, 8, 278

Hollywood, California, U.S.A., adjoining Los Angeles, is famous as a film production centre, 4, 274, 388
Photo-tone Supplement. From New York to Hollywood, 4, *between* 272 and 273

Holmenkollen is the name of a great Norwegian centre for winter sports, 4, 36

Holmes, Oliver Wendell (1809–94) An American doctor, he wrote of life in New England. He was author of *The Autocrat at the Breakfast Table.*

Holm Oak, sometimes known as the Holly Oak, an evergreen tree about 25 ft. in height. It is the smaller of the two kinds of oak tree common in the British Isles, 1, 397
Picture: 1, 396

Holnicote Estate. This estate of 12,420 acres was presented to the National Trust by Sir Richard Acland. It includes beautiful Somerset villages not very far from Minehead, 3, 414

Holst, Gustav (1874–1934). A distinguished musical composer, especially of choral music, he wrote the "Hymn of Jesus," 7, 192

Holstein. See *Schleswig-Holstein.*

Holtenau is a German town at the Baltic end of the Kiel Canal, 4, 46

Holy Granth is the name of bible of the Sikh religion, 3, 338

Holyhead is a port on a small island off Anglesey. It is a ferry-town for steamers to Eire, 3, 103

Holyhead Road, The. Known now as A5, it links London with Holyhead and is 265 miles long. It runs through St. Albans, Coventry and Shrewsbury. Some of it was constructed by Thomas Telford, 5, 38

Holy Island, or *Lindisfarne,* is to be found off the coast of Northumberland. It can be reached on foot at low tide and has a ruined monastery.

Holy Land, The. This is the name we give to Palestine where Christ walked and taught. The Holy Land of the Bible was not so large as Wales, and the Palestine of today is even smaller. Until 1948, Palestine was administered by Britain under mandate. When that mandate ended, the State of Israel was proclaimed and fighting broke out between Jews and Arabs (See *Israel*). There are still wide differences of opinion between Jews and Arabs to be settled. Jerusalem is the capital and the estimated population of Palestine is nearly 2 million, 4, 173 *et seq*
—Palestine in ancient history, 2, 401 *et seq.*
Pictures The New Israel in the Holy Land, 4, 173
By the Shores of the Dead Sea, 4, 177
A View in "Royal David's City," 4, 179
Where Christ Was Born, 4, 181
An Old Custom in Modern Palestine, 4, 182
The Temple Area, Jerusalem, 4, 183
Jerusalem Today, 4, 184
The Harbour at Haifa, 4, 185
Working With Hands and Toes, 4, 187
Jaffa and Gaza, 4, 188
Photo-tone Supplement Scenes in the Holy Land, 4, *between* 176 and 177

Holy Roman Empire. This title was given by the Pope to the dominions of Charlemagne (*q.v.*) because he defended the Pope against his enemies. When Charlemagne died, the title persisted and covered a large number of states, the core of them German. The Holy Roman Emperor was elected by the rulers of these states who paid him allegiance In many ways, the Empire was weak, but it endured a thousand years in its loosely-knit form, 2, 404, 406. 4, 56, 72 *et seq.*

Holyrood, Edinburgh, was formerly the royal palace of Scotland and has been used by our sovereigns since George IV during their visits to the Scottish capital, 3, 116
—David Rizzio was murdered at Holyrood (1566), 2, 152
Picture: 3, 116

Holy Thorn. In A.D. 63, when St Joseph of Arimathea had reached Glastonbury, he plunged his staff into the ground. It took root and became revered as the Holy Thorn of Glastonbury. There is still a bush at Glastonbury Abbey which is said to be the Holy Thorn, 3, 58

Homer. Great epic poet of ancient Greece He probably lived about 1100 B.C. Little is known about him, but he is believed to have been blind, 2, 402; 7, 119
Pictures: A Reading from Homer, 2, 1
The Deification of Homer, 7, 120
Circe and the Swine, 7, 121
The First of the Great Poets, 7, 123
Odysseus Returns to Penelope, 7, 124

Homespun is the name given to woollen cloth woven in their homes by crofters of the Scottish islands and by the Irish in their cottages, 3, 140, 154

Home-Thoughts from Abroad. A Poem by Robert Browning, 9, 103

Homildon Hill, in Northumberland, is where the Scots who had been ravaging England were defeated by the Percys and other northern lords (1402), 2, 129

Homing is the name given to the instinct birds possess which enables them to undertake long journeys through strange lands, 1, 175

Hon. means Honourable or Honorary.

Honan is a province of the middle Hwang Ho River of China. It was in this province that some of the earliest relics of China's ancient history were found, 4, 223

Honduras is a republic of Central America. It has a population of over 1 million, including some primitive Indian tribes. Bananas, coconuts, and hardwoods are the chief products, and there are gold, silver, and other mines Tegucigalpa is the capital, 4, 303, 304

Honduras, British. See *British Honduras.*

Honesty. A biennial plant the seed-heads of which produce silvery discs that may be dried for winter decoration, 8, 278

Honey. Name given to the substance collected by bees from the blossoms of plants, 9, 370
—a favourite food of brown bears, 1, 64

Honey Badger. Name given to the *Ratel* (*q.v.*).

Honey Bee. Kept in a hive, this is one of the most interesting insects.
A colony consists of worker bees, drones and a queen, 1, 259. See *Bee.*
—how does a bee's sting work? 1, 260
Pictures Tongue of the Bee, 1, 260
Wonderful Ways of Bees, 1, 261
Comb of the Honey Bee, 1, 262
Drone, Queen and Worker, 1, 264
Bee among the Sugar, 1, 265
Pollination and the Bee, 10, 297

Honeycomb. This name is given to a part of the Giant's Causeway (*q.v.*) in County Antrim, Ireland, 3, 146
Picture: 3, 141

Honeysuckle. Twining plant producing fragrant blossoms. There are wild and cultivated forms. Family name, Lonicera, 1, 304; 1, 305
Colour Plate: 1, *between* 304 and 305 (Plate 4)

Honfleur is a seaside town of France, opposite Le Havre at the mouth of the River Seine.

Hong Kong. A British colony at the mouth of the Canton River of southern China. It consists of the island of Hong Kong and a small area of the mainland leased from China in 1898 Hong Kong is an important trading and commercial centre and naval base, 3, 388
—captured by the Japanese during the Second World War, 2, 252
Pictures Hong Kong's Most Prominent Building, 3, 391
Hong Kong's Fine Harbour, 4, 243
A Peaceful Fishing Village, 4, 244
A Resting Fisherman, 4, 245

Honiton is a town of Devon famous for its lace.

Honolulu is the capital and chief port of the Hawaiian islands which form the U.S.A. territory of Hawaii It is a centre for exporting pineapples, 4, 296
Picture: 4, 289

Honorary. Conferred as an honour; unpaid. An honorary degree is conferred by a university in recognition

of distinguished work done by the recipient.
An honorary secretary or treasurer receives no money for the duties which he performs.

Honor Oak Park. A suburban district of south-east London, it has a famous reservoir for water.

Honourable Artillery Company. British regiment whose charter was granted in 1537 by Henry VIII to certain London citizens. Either the King or the Prince of Wales has always held command as Captain-General since 1641. Four of its members founded the Ancient and Honourable Company of Boston in America in 1638, the oldest military unit in U.S.A. The headquarters are at Armoury House, Finsbury, London.
Picture: **3**, 10

Honourable Mountain is the Japanese title for their sacred mountain of Fujiyama, **4**, 250

Honshiu, or Honshu, is the largest of the main group of islands that form Japan, **4**, 250

Hooch, Pieter de (1630–77). Well-known Dutch artist, **7**, 52
Picture: **7**, 48

Hood, H.M.S. A British battleship sunk by the German ship *Bismarck* during the Second World War, **2**, 252

Hood, Thomas (1799–1845). An English poet, he holds a high place as a humorist. His serious side is shown in his well-known *Song of the Shirt* and *The Bridge of Sighs*.

Hooded Basilisk. An American species of Iguana or lizard; it lives mainly in trees.

Hooded Crow. A British bird. It is distinguished from other crows by the fact that its back is of a greyish colour.

Hooghli. Name of a river that is one of the mouths of the Ganges. See *Hugli*.

Hook of Holland is an important port and railway centre in the south of Holland. Mail steamers ply regularly between the Hook and the Essex port of Harwich, **3**, 59; **4**, 31, 69

Hook, Theodore Edward (1788–1841). An English novelist and dramatist. He wrote the story *Jack Brag*.

Hooke, Robert (1635–1703). Born at Freshwater, Isle of Wight, he became assistant to Robert Boyle. His theory of gravitation was embodied in Newton's. He was concerned with the development of the barometer.

Hooker, Sir Joseph Dalton (1817–1911). He journeyed to the Antarctic, to the Himalayas and British India, to Africa and America before he settled down as director of Kew Gardens.

Hoonuman. Name of one of the sacred monkeys of the Hindus.

Hoopoe. A bird linked with the hornbills. Most of the varieties have crested heads.

Hoorn is a picturesque township of northern Holland noted for its cheese market, **4**, 32

Hop Clover. A wild plant that thrives at the roadside and in waste places. Its leaves grow in threes and it produces heads of florets as does clover.

Hope, Anthony. See *Hawkins, Sir Anthony Hope*.

Hopkins, Sir Frederick Gowland, O.M., distinguished bio-chemist, discovered the accessory food factors known as vitamins. Awarded Nobel Prize 1929, **7**, 387

Hopper. A box or bin, so shaped that the material in it can be drawn off easily at the bottom.

Hopping Mouse. Larger than an ordinary mouse, this Australian animal resembles a miniature kangaroo. It has a pouch for its young and a long tail with a brush at the end.

Hoppner, John (1758–1810). Born at Whitechapel, London, he won the highest award of the Academy Schools and became a great English painter, **7**, 81
Picture: **7**, 80

Hops are plants which grow with a twining main stem, yielding a product much used in brewing and for medicinal purposes. Hop gardens are found chiefly in Kent, and to a lesser extent in Sussex, Hampshire, Hereford and Worcester, **3**, 38
—hop-pickers may get a troublesome rash, **1**, 348
Pictures: **3**, 38, 39

Horace, Quintus Horatius Flaccus (65–8 B.C.). A great Roman poet. His first book was his *Satires*; but *The Odes*, which came later, are considered his greatest work, **7**, 122

Horatius. Keeper of the bridge at Rome whilst Lars Porsena's forces were advancing upon it, **2**, 51
Pictures: Refugees Approaching Rome, **2**, 51
The Captain of the Gate, **2**, 52
Horatius Holds the Bridge, **2**, 53
He Leaps into the River, **2**, 54

Horehound. One of the perennial herbs grown in gardens It is used in the making of medicines, **1**, 133

Horizon. The line in which earth or sea and sky seem to meet. It is impossible to see beyond the horizon, which, as its name derivation implies, is the limit of vision.
Anything on a level with or parallel to the horizon is horizontal A spirit-level is used to show whether a thing is truly horizontal or not.
—how far away at sea, **8**, 116

Horizon, Artificial. An appliance used in conjunction with a sextant for taking bearings in Antarctic regions.
Picture: **2**, 317

Hormones is the name given to certain secretions of the glands of our bodies, **8**, 230

Horn. The horn is a brass wind musical instrument originally derived from animal horns. It is a long tube with a rather large opening. The bugle is a short horn. The bugle, horn and trumpet in their simple forms are in essence the same instrument. The absence of lateral holes in the tube limits their scale to what is called the harmonic series. Both the horn and the trumpet have been improved by crooks and slides to enable them to produce the chromatic scale. The French horn, which is of the modern type, is a valuable instrument in the orchestra. The so-called English horn is really a large oboe (*q.v.*).
See *Musical Instruments*.
Horns for hunting and in the battles of long ago, as well as for signalling, have been in use throughout the world (*p.h.*)

Hornbeam. A native British tree, sometimes mistaken for an Elm or Beech to which it bears a slight resemblance. Found chiefly in the south of England. The trunk is usually irregularly elliptical and rarely circular, **1**, 404
Pictures: Buds of the Hornbeam, **1**, 288
Trunk of the Hornbeam, **1**, 318
Hornbeam Tree, **1**, 400

Hornbill. A bird the size of a turkey with a horny growth at the base of the upper part of its bill.
Picture: **1**, 179

Hornbook was an early form of child's school-book used in England down to the reign of George II. It consisted usually of a flat piece of wood, with handle, and on this was pasted a sheet with alphabet, numbers, and the Lord's Prayer. The sheet was protected by a piece of transparent horn.
Picture: An Early Hornbook, **8**, 181

Horn, Cape, is the most southerly point of South America, **2**, 346

Hornel, Edward Atkinson (1864–1933) A famous Scottish artist, he belonged to the Glasgow School, **7**, 105, 109
Picture: **7**, 106

Hornet. One of the wasps and the largest of the family It is common in the warmer parts of England.

Horology is the art of measuring time or making clocks. In the manufacture of clocks and watches high skill is required, and there is great scope for good craftsmanship Instruction is given in the art at the National School of Horology, **9**, 220
Pictures A College for Clockmakers, **9**, 222

Horsa. See *Hengist and Horsa*

Hors d'œuvre. Small dishes served at the beginning of a meal. They include sardines, anchovies, etc.

Horse. One of the hoofed animals, each foot having a single toe.
—man's friend – the horse, **1**, 90 (*p.h.*)
—a horse's eyes, **1**, 91
—number of horses, **1**, 97
—wild horses, **1**, 92–95
—names of different parts, **9**, 363
Pictures: Taking the Jump, **1**, 91
Shire Horses, **1**, 92
A Thoroughbred, **1**, 97

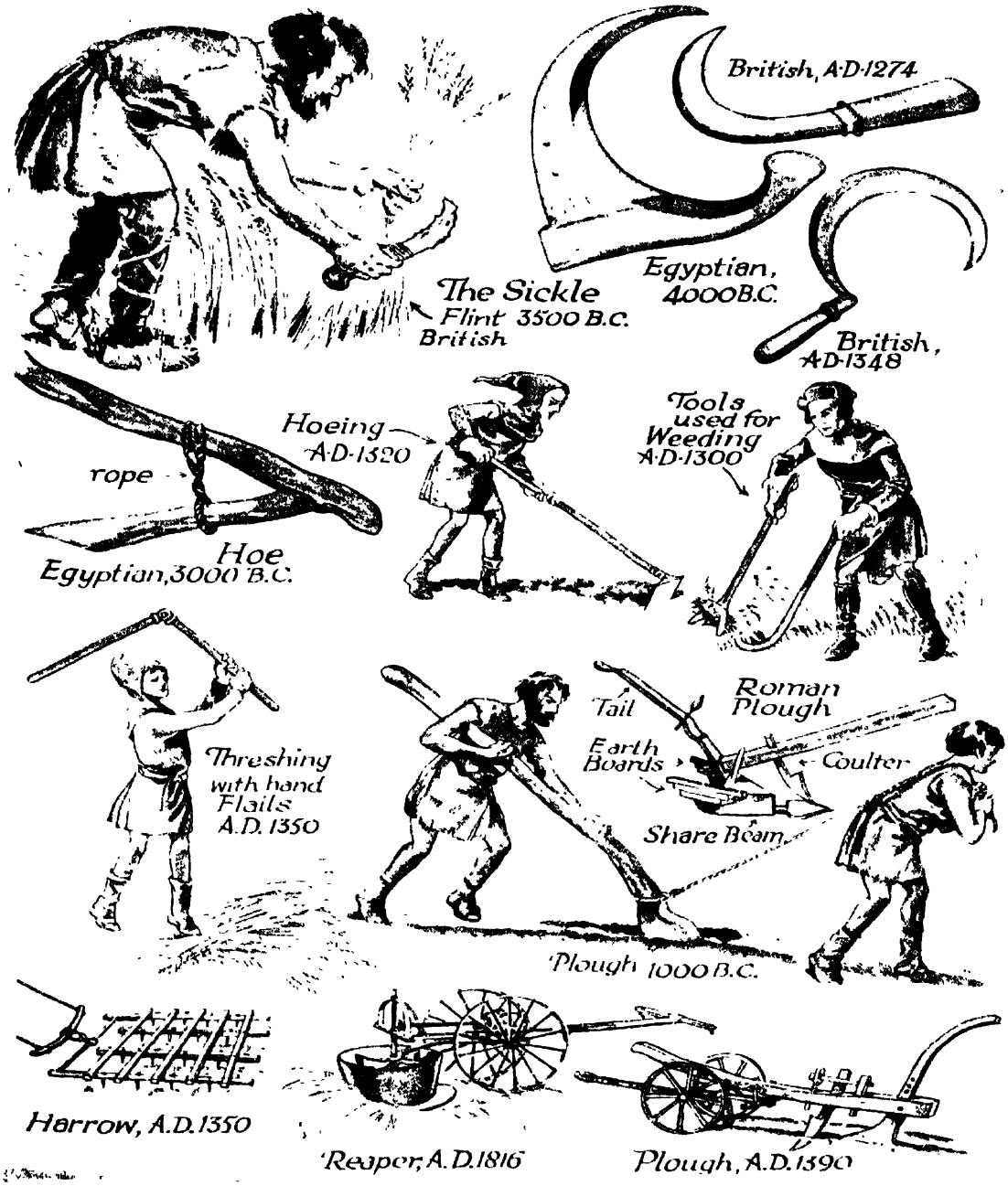
Horse-Beech. Name sometimes given to the hornbeam tree. See *Hornbeam*.

Horse Chestnut. A tree introduced into this country from the East in the sixteenth century. Its flowers, borne in May, are big white pyramids giving the tree a highly ornamental appearance, **1**, 280, 408
Pictures: Buds and their Protection, **1**, 283
First True Leaves, **1**, 284
Interior of a Bud, **1**, 285
As the Leaves Unfold, **1**, 286
Compound Leaf, **1**, 289
Tree in Full Leaf, **1**, 403

Horse Guards, London, is in Whitehall and was once the headquarters of the Commander-in-Chief of the British Army. Visitors to London go to the Horse Guards to see the sentries in their splendid full dress uniforms.
Pictures: **3**, 12, 25

Horse-power is the unit of power taken

HUSBANDRY IN OTHER DAYS



Specially drawn for this work.

From the days of Adam good *husbandry* (see p. 182) has been an essential of human existence. To make the best use of the land for producing food-crops was a necessary fulfilment of the words "In the sweat of thy face shalt thou eat bread" (Genesis II, 19). Many *implements* (see p. 185) have been devised to ease the burden and some of those used by man long before the days of the tractor and combine harvester are shown above.

to be equal to the power required by one horse to raise 33,000 lb. 1 ft. in one minute, **9**, 378

Horse-Radish. A common garden plant, the roots are used in medicine and for making sauce.

Horseshoe Curve is the name given to a part of the famous Cheddar Gorge through the Mendip Hills.
Picture: **3**, 56

Horseshoe Fall, of Niagara, is 158 ft. high and 3,100 ft. in width. It is also known as Canadian Fall, **3**, 192

Horseshoe Magnet is the name used for a magnet which has its poles close together
Picture: **6**, 151

Horsham is a town and residential centre of Sussex. Near by is Christ's Hospital, sometimes known as the Bluecoat School for boys.

Horsley, John Calcott (1817 1903). Well-known British painter.
Picture **7**, 137

Horticulture. Scientific name for gardening, generally applied to the more intensive culture of fruit and vegetables on a commercial scale. Its study is the main subject at various colleges and institutes. Certain universities grant a Science degree in the subject, B.Sc.(Hort.) and much research work is being done by scientists, **1**, 393
Pictures: For Fruit Farmers and Market Gardeners, **1**, 388, 389, 393
Modern Spraying Methods for Fruit Trees, **1**, 394

Hortobagy Plain is a great expanse of treeless grassland in Hungary where fine horses and cattle are reared. It is the home of the *csikos*, or Hungarian cowboys, **4**, 93
Pictures: The Hortobagy Plain, **4**, 3
The Woman at the Well, **4**, 98
Peeps at Life in Hungary, **4**, 99
Hungarian Farmers at Work, **4**, 100
A Son of the Puszta, **4**, 103

Hospital. A place of healing for the sick. The first hospital in Britain was probably at Nantwich, Cheshire, in A.D. 1087; others were at Canterbury (1089); Bath (1100); Rochester (1108), while St. Bartholomew's Hospital in London was opened in 1123. It was not till the nineteenth century, however, that hospitals became general throughout the country.

Hostelry means an inn. The word is connected with hotel and hospital. The idea underlying all these words is the entertaining of travellers or strangers (Latin, *hospites*); in the last case, strangers needing medical attention.

Hot Cross Buns are a survival from pagan times. The cross was added later as a symbol of Christianity, **9**, 319

Hotel de Ville is the name given in France and Belgium to a Town Hall.

Hottentot. A primitive race of South African Natives which has survived, especially in the territory of South-West Africa, where they number about 20,000. Hottentots speak their own distinct language, **3**, 280, 286

Houdon, Jean Antoine. He was a famous sculptor who made a statue of George Washington, the father of American independence, from life. This statue can be seen in the State Capitol of Virginia and is considered to be the most valuable statue in the United States.
Picture: **4**, 262

Houghton, Major. He lost his life in an attempt to find the course of the River Niger, **2**, 322

Hougoumont was the name of a Belgian farm strongly defended by the British and Belgians during the Battle of Waterloo (1815).
Picture: **4**, 22

Hounslow is a town of Middlesex and residential suburb of Greater London. Near by is Kneller Hall, with its Military School of Music and the place is famous for its barracks and for Heston Airport.
The celebrated Heath, over which Dick Turpin and other highwaymen roamed, was enclosed early in the last century.

Housecarls (*hus-carles*). King Harold II's bodyguard of picked troops, **2**, 94

House-Fly. Begins life as a dirty-white egg and becomes then a grub; next a pupa and finally a fly. It is dangerous because it feeds on garbage, **1**, 239
—how can a fly walk upside down? **1**, 239
Pictures: House-Fly and Eggs, **1**, 239
Foot of a Fly, **1**, 240
Eye of a Fly, **1**, 242
Feelers of a Fly, **1**, 242

Household Cavalry. The collective name for the cavalry whose special task is to guard and escort the King. The regiments of the Household Cavalry are the Life Guards and the Royal Horse Guards.
Picture: **3**, 25

House-Leek. This is a plant found growing on old walls and sometimes on ancient roofs. It has rosettes of thick, fleshy leaves and pinkish flowers.

House Martin. See *Martin.*

House of Hanover. Sovereigns of this House were George I, George II, George III, George IV, William IV and Victoria. The period began in 1714 and ended 1901.

House of Keys is the name given to the Lower House of Parliament of the Isle of Man which meets at Douglas, **3**, 92; **9**, 318

House of Lancaster. The three Kings of England of this House were Henry IV, Henry V and Henry VI.

House of Representatives. The Lower House of Congress in the United States of America, **9**, 42

House of the Valleys is the name given to the building in which the Council of the small republic of Andorra meets, **4**, 167.

House of Windsor has been the family name of our Sovereigns since 1917, **2**, 228

House of York. The three Kings of England of this House were Edward IV, Edward V and Richard III.

House Sparrow. Perhaps the best-known of all small birds. A member of the finch family, it can exist on almost any kind of food. Its call is "Chissic: Chissic:" **9**, 177. See *Sparrow.*

Houses of Parliament. The present Houses of Parliament, designed by Sir C. Barry, were built in 1840–57, the previous building having been destroyed by fire. The House of Commons chamber was destroyed by bombs in 1941, but rebuilding began in 1946, and the new Commons Chamber was opened by King George VI in October, 1950, **7**, 322; **9**, 328
Pictures: Inside the Houses of Parliament, **3**, 17
Westminster Hall, **7**, 323
The Mother of Parliaments, **9**, 40
Colour Plate: Westminster Bridge and Big Ben, **3**, *Frontispiece.*
See also *Parliament, Commons, House of,* and *Lords, House of.*

Housman, Laurence (born 1865). A modern English writer and artist, he wrote *The Little Plays of St Francis, Victoria Regina,* and *The Unexpected Years.*

Hove is a seaside and residential town of Sussex. It adjoins Brighton.

Howard-Bury, Colonel C. K., was the leader of an expedition that discovered the way to Mount Everest in 1921, **2**, 389

Howard, Catherine (died 1542). She was married to Henry VIII in 1540 but was beheaded in 1542, **2**, 406

Howard, John (1726–1790). An English reformer who worked to improve conditions in prisons, hospitals, and schools, **2**, 182

Howard of Effingham, Lord (1536–1624). Famous English sailor who became Lord High Admiral in 1585. He was in command when the Spanish Armada appeared, and, supported by such captains as Drake, Hawkins and Frobisher, he was responsible for the defeat of the Spaniards. Created Earl of Nottingham in 1596, he died at Croydon 1624, **8**, 6

Howdah. A seat placed on an elephant's back for carrying two or more passengers. Some howdahs, especially those used on state occasions, have elaborate canopies and coverings.

Howe, Michael, was an Australian bushranger. He called himself "Governor of the Ranges," **3**, 205

Howick Falls are about fifteen miles from Pietermaritzburg in the Natal province of the Union of South Africa. They are on the Umgeni River and drop 365 ft., double the distance of the Niagara Falls.
Picture. **3**, 309

Howitt, William (1792–1879). An English writer, his most famous work is *The Book of the Seasons,* but he wrote on many subjects.
Poem. The Wind in a Frolic, **9**, 106
Picture: **9**, 84

Howitzer. Name of a type of gun used by our Royal Artillery. It discharges heavy projectiles high into the air.

Howler. The largest of the monkeys found in the New World, about 3 ft. in length without counting the tail. These animals have the power of producing far-reaching yells.

Howrah is a city of West Bengal facing Calcutta across the Hugli River and linked with it by a new cantilever bridge opened 1943. It is a centre for jute and cotton.
Name of a railway terminus in Calcutta, **3**, 323, **346**
Picture: **3**, 346

Howrah Bridge, connecting Howrah

with Calcutta across the River Hugli has a span of 1,500 ft. It is the third largest cantilever bridge in the world, and was opened in 1943, 3, 348
Picture: 5, 52

Howth is a seaside town and holiday centre of County Dublin, Eire.

Hoy is the second largest of the Orkney Islands off the coast of Scotland. It is famous for a detached pillar of rock known as the "Old Man of Hoy."

h.p. means horse power, *i.e.*, of an engine.

H.Q. means headquarters, particularly in the Army, *i.e.*, the H.Q. of the Royal Fusiliers are at Hounslow.

Hradcany is the name of a hill in Prague, the Czechoslovak capital, and thus of the castle which stands upon that hill. It is the official residence of the presidents of Czechoslovakia.
Pictures: "Golden" Prague's Fine Old Bridge, 4, 92
In the Grounds of Castle Hradcany, 4, 95

Hram Tso is the name of a lake in Tibet.
Picture: 3, 353

H.R.H. means His (or Her) Royal Highness.

Hti is the name of the metal umbrella-like top which crowns most dagobas or stupas (*q.v.*), 4, 220
Picture: 4, 222

Huachipato is a new iron and steel centre at San Vicente, Chile, 4, 324

Huanaco. Family name of the South American animal the llama (*q.v.*).

Huancayo is the chief town of the department (province) of Junin in Peru. It is a mining centre and is nearly 11,000 ft. above sea level. The name is sometimes spelt Huncayo, 4, 336
Pictures On One of the World's Highest Railways, 4, 331
Sunday Market, 4, 333

Huang Ti, the Yellow Emperor, is said to have ruled China as long ago as 2,698 B.C., 4, 223
—it is probable that his wife started the silk industry by rearing silkworms and inventing a loom for weaving the thread into fabric, 6, 345

Huddersfield is a town of the West Riding of Yorkshire. It has many interests including those of worsted cloth and dyeing, 3, 83

Hudson. A river of the state of New York, U.S.A., flowing into the Atlantic. On its shores stands New York's vast harbour, 5, 46
Pictures: Hudson River Bridge, 5, 48, 49
Colour Plate: The Ocean Voyager's First Glimpse of the New World Today, 4, *facing* 292

Hudson, Henry (died 1611). An English sea captain who discovered and gave his name to Hudson Bay and Strait. In 1611 his crew mutinied and set him adrift in a small boat, 2, 296 *et seq.*; 3, 156
Pictures: Amidst the Icebergs, 2, 298
His Vessel the *Half Moon*, 2, 299
The Crew Traps Game, 2, 300
The Loyal Carpenter, 2, 301
Colour Plate: The Last Voyage of Henry Hudson, 2, *facing* 304

Hudson, William Henry (1841–1922). Great writer on natural history, he was born in the Argentine but settled in England. A memorial by the sculptor, Epstein, was erected in Hyde Park after his death, 4, 336; 7, 233
Pictures: Hudson in America, 7, 233
William Henry Hudson, 7, 234
A Linnet for Sixpence, 7, 235

Hudson Bay is an inland sea of Canada, closed by ice during the winter months. It is named after Henry Hudson the great navigator, 2, 301; 3, 156
Colour Plate: The Last Voyage of Henry Hudson, 2, *facing* 304

Hudson's Bay Company. This famous trading company may be said to have begun in 1670 when King Charles II gave a charter to the "Company of Adventurers of England trading into Hudson's Bay." The Company not only traded; it developed and governed the territories in Canada where its business lay. Later, it was rivalled by the North-West Company, but the two united in 1821 in the Hudson Bay Company. The story of Canada's early exploration and development is very much the story of the Hudson Bay Company, 2, 408; 8, 89
—Prince Rupert was its first Governor, 3, 156 *et seq.*
Pictures: 3, 157, 4, 341

Hudson Strait is the channel between Quebec and Baffin Island. It connects the Atlantic with Hudson's Bay, 2, 296

Hué is the chief port of Annam in the Viet-Nam Republic in Indo-China. It is also the capital of Annam, 4, 212

Huelva is a maritime province of south-west Spain and is also the name of its capital and chief port. The province produces valuable timber, oil, wine, fruit and cork. Its chief wealth, however, lies in the famous copper mines of Rio Tinto and Tharsis.

Huertas are the dry lands of eastern Spain made fertile by means of irrigation, 4, 136

Huggins, Sir William (1824–1910) An eminent British astronomer, he was a pioneer in the use of photography in conjunction with astronomy. He proved that nebulæ were not all clusters of stars, 8, 177

Hugh Capet was elected King of France in 987 and ruled until 999. He was the first of the Capets, a line which gave France her kings for eight hundred years, 4, 6

Hugh of Lincoln (*c.* 1135–1200). A friend of Henry II, he became Bishop of Lincoln. A swan always appears in pictures depicting him as he kept a swan as a pet. He was made a saint in 1220, 2, 100
—he began the building of Lincoln Cathedral in 1192, 7, 299

Hughes, Howard. American airman who with four companions made a round-the-world flight, 1938, 9, 296

Hughes, Professor David Edward (1831–1900). He invented the first really successful telegraphic printing apparatus, 6, 174

Hughes, Thomas (1822–96). Well-known English writer. His best remembered works are *Tom Brown's School-days* and its sequel *Tom Brown at Oxford*, 7, 272
Picture: Tom Brown's Great Fight, 7, 269

Hugli is the river of Calcutta, in the province of West Bengal in the Dominion of India. It forms one of the many mouths of the Ganges: also spelt Hooghli, 3, 345

Hugo, Victor (1802–85). Prominent French writer. At first he wrote plays, but he is best remembered for his work of fiction *Notre Dame de Paris.*
—he lived in the Channel Islands, 3, 52; 4, 16
—his poem about Momotombo volcano, 4, 304
Picture: The Barren Summit of Momotombo, 4, 306

Huguenots. Name given to the French Protestants of all classes in the sixteenth and seventeenth centuries. They suffered persecution and even massacre under different kings until in 1685 when further persecution threatened many thousands fled to other countries, especially England, where they developed new industries and trades, 2, 406

Hull. A Yorkshire river. It runs into the Humber, giving its name to the port of Hull, the name of which is officially Kingston-upon-Hull.

Hull, on the River Humber, is a great port of the East Riding of Yorkshire It has extensive docks and is an important fishing, shipbuilding, and heavy industry centre, 3, 72, 84

Hull is a town of Quebec province, Canada. It has lumber and pulp mills, 3, 194

Human Body. See *Physiology.*
Also see *The Story of the Human Body*, 8, 209 *et seq.*
How the Brain and the Mind Work, 6, 309 *et seq.*
Questions and Answers Human Body, 9, 330–334

Humayan (1508–56) was one of the Moghul Emperors of India, 3, 326 328, 332

Humber is the name given to a large estuary on the east coast of Yorkshire. It is formed by the Rivers Ouse and Trent, which unite, and is about thirty-seven miles in length, 3, 71, 72, 84
Picture: 3, 86

Humble Bee. Sometimes known as the Bumble Bee, every member of a colony dies at the end of summer, leaving only young females. See *Bee.*
Pictures: Nest of the Humble Bee, 1, 263
Underground Nest, 1, 261

Humboldt, Friedrich Heinrich Alexander, Baron von (1769–1859) Great German scientist and naturalist who travelled widely in South America. Author of *Kosmos*, the full story of the universe, 6, 102
—he championed the Panama Canal project, 4, 306

Humboldt's Woolly Monkey. A South American monkey with a prehensile tale.
Photo-tone Supplement: Monkeys and Their Ways, 1, *between* 96 and 97

Hume, David (1711–76). Great Scottish historian. He is best known for his *History of England.*

Hume Dam is near Albury in New South Wales, Australia. By building the dam, Australians made the largest reservoir in the southern hemisphere. The water is used for irrigation pur-

poses and is to be employed now to generate electricity, **3**, 213
Picture: **3**, 211

Humming Bird. The smallest of all birds. It makes a humming noise by the rapid fluttering of its wings. Some specimens are no larger than a bumble bee, **1**, 199

Humus. Black or brown material in garden soil formed by decaying vegetable and animal matter, **8**, 274

Hunan, a province of central China, lying in the valley of the central Yangtze. It is a rich rice-growing area, **4**, 240

Huncayo. See *Huancayo.*

Hundred. Name given in Saxon times to a division of an English county. It had certain rights and duties. Where the Danes settled the hundreds were known as wapentakes, and became wards in the North. The hundreds of Burnham, Desborough and Stoke in the Chiltern Hills are still known as the Chiltern Hundreds (*q.v.*)

Hundred Years' War. This is the name given to the long struggle between England and France that went on from 1338 until 1453. It was really a series of wars and despite such victories as Agincourt (1415) ended in the loss by England of all her French possessions save Calais, **2**, 129, 130, 404

Hungary is a country of Central Europe through which the River Danube flows. It has no coast-line. On its plains vast herds of cattle and horses are reared and agriculture is the main occupation. Budapest is the capital. The population is about 9 millions, **4**, 92, 36[illegible]
Pictures The Hortobagy Plain, **4**, 3
Peasants sell Embroidery, **4**, 96
The Csardas, **4**, 97
The Woman at the Well, **4**, 98
Peeps at Life in Hungary, **4**, 99
Hungarian Farmers at Work, **4**, 100
A Son of the Puszta, **4**, 103
Photo-tone Supplement: The Continent of Europe, **4**, *between* 112 and 113

Hungerford. A country town of Berkshire on the banks of the River Kennet, **3**, 18

Huns. A Germanic tribe who attacked the Roman Empire during the fifth century A.D. Their leader was Attila, "the Scourge of God," **2**, 403

Hunstanton is a popular resort on the Norfolk coast, **3**, 59

Hunt, Colonel H. C. J. Leader of British Expedition to Everest in 1953, when E. P. Hillary and the Sherpa, Tensing, successfully reached the summit of the world's highest mountain. Colonel Hunt and Edmund Hillary were knighted by the Queen, **2**, 390

Hunt, James Henry Leigh (1784-1859). English poet, well known for his *Wit and Humour* and *The Feast of the Poets*, **7**, 144

Hunt, William Holman (1827-1910). English painter of many well-known pictures, most of them of a religious character. His "Light of the World" is in Keble College, Oxford, **7**, 93
Picture: **7**, 93

Hunter, John (1728-93). A great British surgeon and anatomist, he was the first to apply pressure measures to the main trunk blood arteries, **7**, 379
Picture: **7**, 381

Hunter, Sir Robert. One of the founders of the National Trust which preserves for us our places of historic interest and natural beauty, **3**, 406

Hunting Dog of Africa. Name given to a wild dog now becoming rare.
Picture: **1**, 83

Hunting Dogs, The. See *Canes Venatica.*

Huntingdonshire. A county of central England. Its interests are almost entirely agricultural, and it has many market gardens and small holdings. The Nene and Ouse are its chief rivers. The county town is Huntingdon, which stands on the River Ouse. Oliver Cromwell was born here, **3**, 66

Hunting Leopard. See *Cheetah.*

Huntsman, Benjamin. A Sheffield watchmaker, he invented crucible or cast steel in 1740, **6**, 56

Hurdy-Gurdy. This was an old musical instrument, not unlike the violin in appearance, which originated in France, where during the thirteenth and fourteenth centuries it was known as the *symphonia.* The four strings were set in vibration by the friction of a wheel. The name has also been adopted for a more modern instrument which is played by turning a handle and is a small type of barrel-organ. See *Musical Instruments.*

Huron is one of the five Great Lakes of North America, **3**, 179
Pictorial Map: **4**, 291

Hurricane. A violent storm or tempest. In this country we are, fortunately, seldom visited by hurricanes, but in the tropics they are frequent and sometimes terribly destructive, **2**, 250
See also *The Weather and Its Ways*, **5**, 1 *et seq.*

Hurricane, or Hawker Hurricane. Name of a famous British fighting aeroplane, **5**, 210
Picture: **5**, 213

Hurricane Tree. Name given to a silk-cotton tree in the Bahama Islands because it is unharmed by hurricanes, **1**, 331

Hurstmonceux. See *Herstmonceux.*

Husbandry means farming, and at one time the word "husband" meant to till the ground; the word also meant one who was master of his house. We still speak of "husbanding our resources" meaning to use them carefully, while well-kept farmland where crops are properly harvested is one which enjoys the benefits of good husbandry. Through the centuries many implements have been devised as aids to husbandry and the plough was among the very early tools devised by the human race. See also *Farmer's Busy Year.*
Picture: Husbandry in Other Days, **10**, 179

Husk means to take off the husk or outer covering of seeds or grain. Husking is now mainly done by machinery.

Husky. Name given to the draught-dog of the Arctic regions.
Picture: **1**, 107

Huss, John, was the great religious reformer of Bohemia, born about 1370. He was burnt at the stake in 1415 and is regarded as one of the great forerunners of Protestant reform, **9**, 325

Hustings. Before voting by secret ballot was instituted in 1872, voting took place in public. The hustings was a platform erected where the voting took place, from which the rival candidates could address the electors.
Picture: **9**, 53

Hutton, James (1726-97). A British geologist, he maintained that our study of the processes of past ages should be based on present-day observation

Huxley, Dr. Julian (born 1887). A distinguished biologist, writer and broadcaster. Grandson of Professor T. H. Huxley. Secretary of the London Zoological Society 1935-43. Appointed first Director-General of Unesco (*q.v.*) in December 1946.

Huxley, Thomas Henry (1825-95). He was born at Ealing and became a great zoologist. It was he who discovered Huxley's layer in the roots of the hair, **7**, 366
Picture **7**, 367

Huygens, Christian (1629-95). A Dutch mathematician and astronomer. He was the first to invent a really automatic timepiece, he taught how to make lenses for large telescopes and contrived a micrometer, **7**, 354; **9**, 220

Hwang-Ho is one of the great rivers of China, about 2,600 miles in length. It is also known as the Yellow River, **4**, 223, 240

Hwashan is one of the five sacred mountains of China. It stands in the north-western province of Shensi and is where the Emperors used to offer sacrifices to Heaven and Earth
Pictures A Pilgrim's Offering, **4**, 226
A Sacred Mountain Landscape, **4**, 227

Hyacinth. One of the most popular of spring flowering bulbs, **8**, 280
Picture **8**, 278

Hyacinth, Roman. This is the miniature form of the hyacinth. The bulbs require careful handling, as they may cause a rash if the skin is at all delicate, **1**, 348

Hyacinth, Water. See *Water Hyacinth.*

Hyacinth, Wild. See *Wild Hyacinth.*

Hyæna. An evil-smelling cowardly animal possessing enormously strong jaws, **1**, 83
—the three varieties are the striped, brown and spotted (also known as the laughing hyæna), **1**, 84
Picture. **1**, 82

Hybrid means a cross between two species. Perhaps the best example is the mule, a hybrid of the horse and the ass.
Gardeners hybridise plants by touching the flower of one species with pollen from another species. The loganberry is the result of the hybridisation of the blackberry and raspberry.

Hyde is a town in Cheshire interested in the cotton industry.

Hyde, Edward. See *Clarendon, Edward Hyde, First Earl of.*

Hyde Park is one of the best known open spaces of London, nearly 400

acres in extent. Through it flows the Serpentine.
—it was the scene of the Great Exhibition of 1851, **2**, 214
Picture: **3**, 21

Hyderabad. (1) A great state of the Indian Union in central India whose capital (of the same name) is the fourth largest town in India, **3**, 344
(2) A district of the Sind province of Pakistan, whose chief town has the same name. This Hyderabad is on the banks of the River Indus.
Colour Plate: At the Char Minar in Hyderabad, **3**, *facing* 284

Hydra. A simple form of freshwater animal life of the polyp family. It is related to sea coral and the sea anemone. There are three British species, green, brown and grey. It attaches itself to weeds in ponds and with their tentacles catch water fleas and similar creatures on which they feed.

Hydra. In Greek mythology the Hydra was a nine-headed sea-monster which lived in swamp and did great damage in the neighbouring country. The killing of this monster was one of the twelve labours of Hercules, but as fast as he struck off one of the heads two others appeared in its place. With the help of Iolaus, Hercules overcame the monster at last.

Hydrangea. A shrub bearing large, showy clusters of bluish, pink or white flowers. It is a native of China and Japan.

Hydrated means combined with water. The word is used by chemists of compounds containing water molecules in their original form.

Hydraulic. Having to do with liquids, and especially with water. Hydraulic rams, presses, lifts, cranes, riveters, jacks and motors are worked by water under great pressure.
Waterwheels and water turbines drive machinery by hydraulic power. Pumps are hydraulic appliances, as they are used for moving water
Picture: A 2,000-ton Forging Press in Action, **6**, 78

Hydro-Electric Power is electricity generated by water power. See *Electric Power from Water*, **5**, 63 *et seq.*

Hydrogen is a colourless, odourless, tasteless gas, one of the chemical elements (symbol H). It is the lightest substance known being rather more than 14 times as light as air. It combines with oxygen to form water (H_2O), **9**, 302, 303

Hydrogenation of Coal. A modern method of obtaining from coal motor spirit, lubricating oil and fuel oil, **6**, 20

Hydrophobia is a disease which results from the bite of a mad animal. It is also called rabies. Dogs are most subject to it, and for this reason all dogs have to be muzzled in a district where a case of dog rabies has occurred.

Hydroplane. A vessel with a more or less flat bottom which merely skims the water when travelling at speed.

Hygieia. In Greek mythology she was the goddess of health, being the daughter of Aesculapius (*q.v.*) the god of medicine.

Hygiene is the science of health. It is concerned with the preservation of good health and the prevention of disease by such means as strict cleanliness in all ways, fresh air, right conditions of labour, and proper attention to physical laws.

Hygrometer. A device for measuring the amount of moisture present in the atmosphere. Several different forms are used, but that most generally employed consists of two thermometers, one of which has its bulb wrapped in muslin dipping into water, so that it remains moist.
Evaporation keeps the "wet" bulb cooler than the "dry" bulb, and, as dampness in the air checks evaporation, the difference between the two readings decreases as the air becomes damper.

Hyne, Charles John Cutcliffe Wright (1865–1944). Author of the famous *Captain Kettle* stories. In all Mr. Cutcliffe Hyne wrote about forty books.

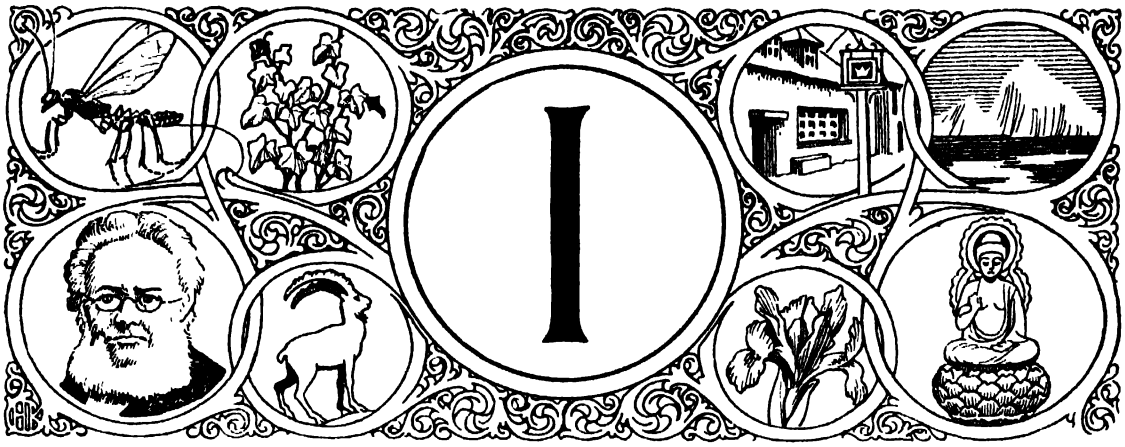
Hyogo is a seaport near Kobe, in Japan. It possesses a famous Diabutsu, or statue.

Hypericum. See *St. John's Wort.*

Hypocrisy is the pretence of being better than one really is. A hypocrite, that is, one who is guilty of hypocrisy, seeks to deceive others by an outward show of virtues which he does not possess.
The most notorious hypocrite of fiction is Uriah Heep, about whom one reads in Dickens's *David Copperfield.*

Hythe. A seaside town and holiday centre of Kent. It is one of the Cinque Ports.

Hythe Flying-Boat is one of the most famous of the Short Flying-Boats.



I is the ninth letter of our alphabet, and the third of the five vowels. The Greeks called it Iota. Its commonest sound is short, as in "bit," "hit" and "sit." The long I is found in single-syllable words ending in E—"bite," "site," "write," etc.; and when followed by gh or gn, as in "might" and "resign." The letter also has the sound of U in "dirt," and of long E in "machine." It is one of the two letters which by itself is an English word—the nominative case of the first personal pronoun. In Roman numerals it stands for the number one and for first; and we have adopted it to serve the same purpose. Thus, William the First may be written William I. In chemistry, I is the symbol for the element iodine.

Ian Hay. See *Beith, John Hay*

Ibanez, Vincente Blasco (1867–1928), Spanish novelist. He wrote *Blood and Sand* and *The Four Horsemen of the Apocalypse.*

Iberia is the name of the European peninsula which contains Spain and Portugal, **4,** 134

Iberis. Family name of the hardy annual plant *Candytuft* (*q.v.*). The perennial Candytuft is usually known by the name of Iberis.

Ibex. A wild goat found in the Alps of Europe and in the mountains of parts of Asia. (*p.h.*)

ib. or ibid. means *ibidem, i.e.*, in the same place.

Ibis. A wading-bird belonging to the stork family, its beak curving downwards. In ancient times it was an object of worship in Egypt

Ibn Batuta, The Story of. About a Moor of Tangiers who made some amazing journeys in the fourteenth century, **2,** 271 *et seq.*
Pictures: Sledge-dogs of Russia, **2,** 271
Dictating an Account of his Travels, **2,** 272

Ibsen, Henrik (1828–1906). Norwegian novelist and dramatist. His plays have had great success in England and other countries. Among the best-known are *The Wild Duck, The Master Builder, Ghosts, The Pillars of Society* and the verse drama *Peter Gynt.* (*p.h.*)

Ice is the form which water assumes when it freezes. Freezing normally occurs at 32° F., but if water be kept perfectly still it can be cooled several degrees lower without freezing.
As it freezes, water expands, so that ice is lighter than water, floats on the top and protects the water below. The colour of ice in large masses is blue.
Pictures: A Cave Formed With Ice, **5,** 6
Pictures in the Ice, **5,** 7
When the Warm Front Meets the Cold, **5,** 10

Ice Age, Great. See *Great Ice Age.*

Icebergs are large masses of ice that have broken off from the ends of glaciers discharging into the sea in polar regions. Only about one-eighth of an iceberg's bulk is out of water; yet icebergs rising over 1,000 ft. above the surface of the sea have been met with, **9,** 308. (*p.h.*)
Photo-tone Supplement: In the Polar Regions, **2,** *between* 368 and 369

Icefields Highway is the name of a road running through Jasper National Park, Canada. It is so named because from this road you can see the Columbia Icefield, with Saskatchewan and Athabaska Glaciers
Picture: **3,** 188

Iceland is an island republic of the North Atlantic and has been so since 1944 when, after a vote had been taken, the final links with the Danish crown were severed. Reykjavik is the capital and the Parliament is known as The Althing. The population numbers some 121,000 and fisheries are the most important industry, **4,** 47 *et seq.*

Iceland Moss is a form of lichen which can be cooked and eaten by man, **1,** 357

Iceland Poppies. Perennial form of this race of plants. See *Poppies.*

Iceni. An ancient British tribe which inhabited what is now Norfolk and Suffolk. Under their queen, Boadicea (*q.v.*), they revolted against the Romans A.D. 61, **2,** 403

Ich Dien means "I serve." It is said to have been the motto adopted by Edward the Black Prince. For a long time it has been the motto of the Prince of Wales, the crest being three white ostrich plumes.

Ichneumon. A small cat-like carnivorous animal found in Egypt. It is said to eat the eggs of crocodiles

Ichneumon Fly. A family of insects containing many species. They lay their eggs on the larva of other insects. (*p.h.*)

Ichthyology. Scientific name given to that branch of zoology that deals with the structure, form and habits of fish as well as their classification

Ichthyosaurus, also known as the fish-lizard, was a long-jawed creature armed with sharp teeth, **1,** 25
Pictures: **1,** 15
Fossil Remains, **1,** 17
Colour Plate: Animals of Prehistoric Times, **1,** *facing* 36

I.C.I. means the Imperial Chemical Industries, a great chemical manufacturing company which is an amalgamation of a number of companies formed in 1926. Their chemists were the discoverers of Paludrine, an anti-malarial drug, and Antrycide, a preventive of the cattle disease caused by the tsetse-fly, **7,** 416

Icknield Way. An old Roman road, the Via Iceniana, which ran from Exeter, through Dorchester to Norfolk.

Idaho is one of the Western States of the U.S.A. It is a stock-raising country and has much wealth in timber and minerals. Boise is the capital.
Pictorial Map: **4,** 290

Iddo. A port of Nigeria and the sister-port of Lagos and Apapa. It was once swamp land.
Picture: **4,** 379

Ides of March. A division of time in the Roman calendar referring to the 15th day of March. This was the date on which Julius Cæsar was assassinated.
Picture: **2,** 77

Idiom. A mode of expression peculiar to a language. "How do you do?" is an English idiomatic expression and the same idea in other languages may be expressed as "How goes it?" or in other ways.

Idlewild is the name of the new airport which is being built in the U.S.A. for

the city of New York, 4, 270
Idol. Image of a deity which is worshipped; a pagan god. Used also of a person or thing which is the object of excessive devotion or affection. (*p.h.*)
Idyll is the term applied to a poem on country life; a poem dealing with a fine subject in a lofty style.
i.e. means *Id est*, that is.
Igloos are winter houses constructed by the Eskimo from hard blocks of frozen snow, 3, 164
Picture: 3, 163
Photo-tone Supplement: In the Polar Regions, 2, *between* 368 and 369
Iguana. A species of lizard found in tropical America. The Australian Goanna is not really an Iguana, but belongs to the Monitor species
Picture; 1, 153
Iguanodon, an extinct reptile, the largest of the dinosaurs, 1, 7
Picture: 1, 9
Iguassu. A river of South America, a tributary of the River Parana. It is noted for its wonderful falls, 4, 331
Pictures: 4, 325
Ijssel Lake. Name of the expanse of water formerly known as the Zuyder Zee before the enclosing dam was built, 4, 30
Picture: 4, 29
Colour Plate In the Harbour of Marken Island Holland, 4, *facing* 60
I Know a Bank. A Poem by William Shakespeare, 9, 86
Ile de France. The small island on the River Seine in France where Clovis made his capital and which now forms the very heart of Paris, 4, 6
Ile de la Cité is an island in the River Seine. It is the heart of Paris and has upon it the cathedral church of Notre Dame.
Picture: 4, 6
Iles Normandes is the French name for the Channel Islands, 3, 53
Ilford. A district of Essex within the area of Greater London. Many remains of prehistoric animals have been found here, 1, 32
Picture: 1, 32
Ilfracombe is a popular seaside resort on the coast of North Devon. It is also a fishing centre, 3, 46
Ili. A river of Sinkiang, the westernmost province of China, 4, 238
Iliad is the name of one of the great works of Homer telling the story of the siege of Troy, 2, 402; 7, 119
Illimani. A mountain peak of Bolivia, 22,000 ft. in height.
Illinois is a State of the U.S.A. It is the centre of a vast agricultural district and contains the city of Chicago. Its capital is Springfield.
Pictorial Map. 4, 291
Illusion. A deception; a thing which misleads. Mirages seen in the desert are illusions. They make a person believe that he sees what really does not exist where he seems to see it.
Illustrious. A British aircraft carrier whose service in the Second World War included operations with the Eastern Fleet.
Picture: 2, 254
Ilminster is a town of Somerset. It is the market of a large agricultural district and makes lace.
I.L.P. means Independent Labour Party.
Imam is the title used by the ruler of the Yemen, a state of southern Arabia, 4, 205
Imatra Falls are the greatest waterfalls in Europe. They are to be found in the Karelo-Finnish Soviet Socialist Republic of the U.S.S.R. (Russia). Their energy is used by electrical power houses, 4, 50
Picture: 4, 49
Immigrant. One who enters a country to settle in it. An Englishman settling in Australia is an emigrant from England and an immigrant into Australia.
A German or Italian doing the same thing would be called an alien immigrant as he is not of British nationality.
Immortal means one who cannot die. The Romans called their gods the immortals. Shakespeare and Virgil are among the immortals in the sense that their names and works will never die out of men's memories.
Immortals. Name given in ancient times to a special body of Persian soldiers. When one was struck down another filled his place, 2, 25
Immingham, Lincolnshire A large port much used by vessels sailing to and from the Baltic lands, 3, 84
Imperial Airways was an organisation formed in 1924 to establish civil aviation commercial routes. It has now been absorbed in such bodies as British Overseas Airways Corporation (B.O.A.C.), British European Airways (B.E.A.), and British South American Airways (B.S.A.A.), 2, 242
Imperial Institute, South Kensington, London, a memorial to Queen Victoria's 1887 Jubilee, was opened in 1893. It contains a permanent exhibition which illustrates the products, resources and industries of the British colonies.
Impetus means the force which a body has owing to its motion and weight; momentum. If you are cycling and stop pedalling, you will be kept moving by your own impetus and that of the cycle.
Impis was the name given by Zulus to their regiments of warriors, 3, 307
Picture: 3, 308
Implement. A tool, instrument or machine. We are all familiar with garden implements—hoes, spades, forks, rakes, trowels and so on. The farmer uses implements of a larger kind—ploughs, harrows, reapers and threshing machines.
Picture. 10, 179
Impregnated means soaked; saturated. Paper is impregnated with paraffin wax to make it water-proof; and wood with certain chemicals to render it less inflammable.
Ina was King of Wessex from 688 until about A.D. 726. He was one of the greatest Saxon law-givers, his work forming the basis for Alfred's Code. He is also linked with the progress of Christianity in England and the Archbishop's palace at Wells has a history going back to his times, 3, 58
Inaccessible Island is in the Antarctic, off the coast of Victoria Land.
Photo-tone Supplement: From Spray Ridges to Crystal Fairyland, 2, *between* 368 and 369
There is another island of this name in the Atlantic in the Tristan da Cunha group.
Ina of Wessex was one of the greatest Saxon law-givers, his work forming the foundation of Alfred's Code. He resigned his crown about A.D. 726.
Incandescent. Glowing brightly with intense heat. The filament of an electric lamp is made incandescent by the current passing through it, and the mantle of a gas lamp by the gas burning inside it.
Incas were early inhabitants of Peru, who developed a high standard of civilisation during the Middle Ages. They built cities and developed agricultural methods, wove cloth and made pottery and bronze ornaments. They were a religious people, and initiated a peculiar form of state-socialism, controlled by a bureaucracy wielding religious authority, 4, 324; 9, 30
Pictures: Silver Mines of Vanished Incas, 9, 29
Remains of Temples at Chan Chan, 9, 31
Ruins of Chan Chan, 9, 31
House of the "Virgins of the Sun," 9, 32
In the Servants' Hall, 9, 32
The Walls of Chan Chan, 9, 33
Inchcape Rock sometimes known as the Bell Rock, stands off the coast of Angus, Scotland, about 12 miles out to sea. A warning bell was placed here by the abbot of Aberbrothock (Arbroath). To-day it has a famous lighthouse.
Incog. means incognito. If one of the Royal Princes were taking a holiday he might travel incognito under one of his lesser titles.
In such circumstances the honours due to a Royal Prince would not be paid.
Income Tax. A tax levied on incomes at the rate of so much in the £, with certain allowances. Incomes are assessed under different schedules, but in recent years people with regular salaries or wages have had the tax deducted when they were paid. This is known as the P.A.Y.E. (Pay As You Earn) system.
Incomparabilis. A type of narcissus having star-shaped flowers.
Picture: 8, 279
Incubation means to brood over eggs to hatch them.
The period of incubation in days for different birds is as follows:
Canary, 14; pigeon, 18; bantam, 19–21; hen, 21; duck, 28; goose, 30; pheasant, 24; turkey, 28, peafowl, 28; guinea fowl, 28; swan, 42; ostrich, 42.
Incubator. An appliance in which chicks and other birds are hatched. It may be heated by oil or gas, 6, 385
Incur means to expose oneself to: to become subject to. A person who breaks the law incurs the risk of punishment.
Independence Day falls on July 4th, and is celebrated as a great national holiday in the United States of America. It is the anniversary of the day on which Congress adopted the Declaration of Independence, 1776, 2, 194

Independence Hall, Philadelphia, is one of the most historic buildings in the United States. Here George Washington was chosen as Commander-in-Chief of the army and here the Constitution of the United States was approved and signed.
Picture: 4, 263

Independence, War of American (1775-1783). Fought by the American colonists against the troops of King George III. The colonists resented the claim of the British government to tax them without allowing them representatives in Parliament. Obstinacy and lack of understanding by George III and his ministers brought on the war which resulted in the emergence of the United States as a free and independent power, 2, 190 *et seq.*, 409
Pictures: Lexington Common, 2, 190
Bonfire for the Sons of Liberty, 2, 191
Boston Tea Party, 2, 192
Signing the Declaration of Independence, 2, 193
Surrender of Cornwallis, 2, 194
Washington's Farewell to his Generals, 2, 195

India. A sub-continent of Asia which is now divided into two independent members of the British Commonwealth of Nations, viz.:
(1) India (Union of India), which embraces the predominantly Hindu Parts of the sub-continent See *India, Union of.*
(2) Pakistan which is a predominantly Moslem Dominion. See *Pakistan.*
(3) States wholly or partly associated with these two Dominons, 2, 206, 416
—Alexander the Great in India, 2, 44
See *Through India's Dominions*, 3, 311 *et seq.*
Pictorial Map, 10, 188-9

India, French. This consists of small settlements of which the chief is Pondichery.

Indian Basketry. See *Basketry, Indian.*

Indian Cobra. See *Cobra, Indian.*

Indiana is one of the north central States of the U.S.A. It is watered by the River Ohio and its interests are mainly agricultural, though it possesses mineral wealth and has a very important iron and steel industry. The capital is Indianopolis.
Pictorial Map: 4, 291

Indian Corn. Name sometimes given to maize (*q.v.*).

Indian Desert or Thar is the name given to a great tract of country to the north-west of Rajputana, 3, 341

Indian Mutiny, The (1857) began among Indian soldiers and spread to alarming proportions. The Residency at Lucknow was besieged and a massacre of the garrison took place at Cawnpore. Sir Colin Campbell (afterwards Lord Clyde) relieved Lucknow, 2, 218, 412; 3, 360

Indian Nettle. A plant the leaves of which would burn the hand like red-hot iron at a touch, 1, 352

Indian Railways connect up all parts of the country and there are about 40,000 miles of line. One of the principal gauges is 5 ft. 6 in., much wider than that of Britain and there are many metre-gauge systems (about 3 ft. 3 in.).
—what railway travel is like in India, 3, 322
—railway routes from Calcutta, 3, 323

Indian Runner. Name given to a breed of domesticated duck famous for egg-laying. It is a native of Burma and Malaya, and has an upright carriage almost like that of a penguin.

Indian Stitch, Coiled. See *Coiled Indian Stitch.*

Indian Swallowtail. A butterfly, 6 in. or more across the wings, which are jet black with scarlet or golden eyes, 1, 249

Indian Territory in the U.S.A. consists of tracts of land set aside for the Red Indians. There are large areas in Arizona, Oklahoma, Montana and other States.

India-Rubber. The milky substance from certain tropical trees. When mixed with sulphur and heated, it loses its plastic character and becomes permanently elastic.
Vulcanisation, as this process is called, was discovered in 1839 by Charles Goodyear, an American. See *Rubber.*

India, Union of. This is the term used in the provisional Constitution of the new Republic of India to embrace the Republic and other states of the Indian sub-continent associated with it. The Union may be said to have begun in 1947, when political power was handed over to the new Dominions of India and Pakistan. Since those Dominions were created, many other independent states of India have joined the Union of India which is predominantly Hindu. The most notable recent example is Rajasthan, a combination of Indian states which now forms the largest single unit in the Indian Union. The capital city is Delhi.
The Union of India became a sovereign democratic republic in January, 1950, but remained a member of the British Commonwealth of Nations, 2, 258, 415; 3, 311 *et seq.*; 4, 369
Pictorial Map, 10, 188-9

Indigo. A blue colouring matter or dye obtained from an Indian plant. We read in history about the ancient Britons staining their bodies with the juice of a wild plant named woad, which is a kind of indigo, 5, 108

Indo-China, Federation of. This part of the French Union was formerly known as French Indo-China and now consists of the kingdoms of Cambodia and Laos, the southern Highlands, and the Republic of Viet-Nam (Tonking, northern Annam, and Cochin-China). France has recognised the independence of the Viet-Nam Republic within the French Union. Rice, anthracite, and rubber are important products. Hanoi is the chief town and the capital of the Viet-Nam republic which largely embraces the Annamite people of Indo-China, 4, 18, 212, 375
—occupied by the Japanese, 2, 252
Pictures: Workers in a Cochin-China Ricefield, 4, 212
Mysterious Angkor Vat, 4, 213

Indonesia. This term embraces the following islands of the East Indies—Sumatra, Java, Borneo, Celebes, and many smaller ones. It is also the name of the republic which the peoples of many of the islands have established in these former Dutch colonial possessions. Relations between the Indonesian Republic and Holland have still to be settled and this may take the form of a Netherlands Indonesian Union under the Dutch Crown. This would presumably include the other independent states which have been set up by the peoples of Indonesia. The products of Indonesia include rice, maize, soya beans, cassava, and ground nuts Tea, rubber, and coffee are also produced. Tin, bauxite, and coal are mined. Oil is also produced. The peoples are of many different races and some sixty different languages are spoken, 4, 374

Indore is a state of Central India where cotton, wheat and other crops are raised. It has a capital of the same name.

Indulgences were pardons for sins once sold by alleged officials of the Roman Catholic Church and attacked by such reformers as Martin Luther (1483-1546), 2, 140

Induna. A Zulu chief, 3, 310

Indus. A great river of India, rising in Tibet and flowing through Kashmir and the West Punjab to enter the Arabian Sea south of Karachi. The river is some 1,500 miles long and its waters are used for irrigation, 3, 344

Industeo is a shortened form of Industrial Co-operative, a type of co-operative work widely established in the Chinese textile industry, 4, 241

Indus-Ganges Plain is the name for one of the main geographical regions of the Indian sub-continent. It is the region of greatest population where grain crops, cotton, sugar, jute, and tea are grown, 3, 313

Industrial Research. See *Science and the Future.*

Industrial Revolution. A period of great change in English economic and social life during which industry developed at an amazing rate. It is usually reckoned as having begun about the year 1760, 2, 183, 208, 409; 4, 344; 9, 326
Picture: Child Labour in the Early Textile Factories, 2, 211
The Industrial Revolution, 9, 327

Infamous means having a very bad reputation; detestable. One speaks of infamous conduct, infamous cruelty.

Inferior Conjunction is a term used by astronomers. It means that when a planet is passing on our side of the sun and the earth, planet and sun are in line, the planet is said to be in inferior conjunction, 8, 140

Inflate means to blow up or extend by blowing. Toy balloons are inflated with air, large balloons with coal-gas Prices are said to be inflated when increased to an unreasonable extent.

Infra dig. means *infra dignitatem, i.e.*, beneath one's dignity.

Infra-Red. Below red in the spectrum. The red rays of the spectrum have waves of the greatest length that affect the eye. Below these come heat rays, with longer waves; and they again shade off downwards into wireless waves.

Beyond the opposite ends of the visible spectrum are the ultra-violet rays—chemical rays, X-rays and gamma rays.

Ingelow, Jean (1820 97). An English novelist and poet, she wrote *Mopsa the Fairy* and other tales for girls and boys.
Poem. Seven Years Old, **9,** 90

Ingleborough is a peak of the Pennines in Yorkshire near Settle. It is 2,373 ft. high.

Ingoldsby Legends were written, some in verse and others in prose, by the Rev. Richard Harris Barham and first published in 1837. The most famous of them is *The Jackdaw of Rheims.*

Ingot means a mass of unwrought metal which has been cast in a mould, **6,** 71
Pictures When the Ingots Are Stripped, **6,** 73
In the Mills at Margam, **6,** 74

Ingredient means any one of the materials used in a mixture. The recipes in a cookery book state the quantities of the various ingredients - flour, sugar, milk, eggs, raisins, etc —needed for making a cake or pudding

Ingres, Jean Auguste Dominique (1780-1867). A great French artist
Picture **7,** 120

Inherent. Belonging by nature, inseparable A magnet has the inherent quality of possessing a north and a south pole Great strength is inherent in the elephant

Initial. The first letter of a name or word. A person's surname is generally given in full, though his Christian names may be represented by their initials only The initial stage of an undertaking is its opening or first stage.

Ink is largely produced from tannin with a mixture of iron and other ingredients, such as gum. Printers' ink is made from lamp-black ground with oil or varnish, **9,** 412
—the ancient Greeks used as ink a liquid taken from the cuttle-fish, **2,** 20

Inkerman is a town of the Crimea, in the Soviet Union. It is associated in history with a battle of the Crimean War (1854), **2,** 217

Inkpen Beacon. Well-known height in Berkshire, a short distance from Hungerford. It is part of the chalk hill system of this part of England and rises to over 950 ft

Inn. A house where shelter and refreshment is provided for travellers on paying a reasonable price. (*p.h.*)

Inn is the name of a river of Central Europe about 300 miles in length It rises in Switzerland and empties into the Danube at Passau, **4,** 90

Innisfree, The Lake Isle of. A *Poem* by W. B. Yeats, **9,** 85

Innocents Abroad. Title of a world-famous book by Mark Twain, **7,** 221

Innsbruck is a town of Austria and capital of the Tyrol. It is a tourist centre and has many fine buildings, **4,** 91
Pictures: Innsbruck, the Tyrolean Gateway to Austria, **4,** 88
Innsbruck Railway Station, **4,** 89

Inns of Court. The four Honourable Societies of the Inns of Court were formed in the early fourteenth century and constitute what is virtually a university of English law. Two of the Inns comprise the Temple, Gray's Inn is the third, and Lincoln's Inn, the fourth. They have the exclusive right of calling law students to the English Bar and to disbar any member.
Picture : Lincoln's Inn, **3,** 23

Inoculation means the introduction of a virus or a micro-organism into the system through an abrasion or perforation of the skin in order to introduce a disease. By carrying this out in a carefully-controlled way it is possible to prevent certain diseases from having any real hold on a person so treated and so prevent the disease from spreading In the case of small-pox, at one time a very virulent disease, the special measure of inoculation is usually known as vaccination (*q.v.*), **7,** 368

Inorganic means having no organs, therefore not living. Minerals are inorganic; animals and vegetables are organic, containing organs that do certain work and play a part in life and growth.

Inquisition. The name of a Court set up by the Roman Catholic Church in Spain to try and punish persons regarded as heretics. It functioned not only in Spain, but in other lands where Spanish sovereigns ruled, *e.g.*, the Low Countries, **4,** 20
—Galileo faced the Inquisition in 1633, **8,** 108
Picture. **7,** 349

Insect. Small invertebrate animal, whose body is divided into head, thorax and abdomen. The head has feelers known as antennæ Attached to the thorax are six jointed legs and usually two pairs of wings. The abdomen, the largest part, contains the internal organs but has no limbs. Over a million species are now known, **1,** 239 *et seq.*, **9,** 368
Colour Plate Some Members of the Insect Family, **6,** *facing* 384

Insect, Leaf. See *Leaf Insect.*

Insect, Stick. See *Stick Insect.*

Insect Stings. See *Stings of Insect.*

Inshore Fishermen work mostly in motor-boats Sometimes they make use of drift-nets, but more often use strong lines baited with many hooks, **8,** 74

Insignia, Royal, means the regalia, or symbols of royalty. With the Crown jewels, they are kept in the Tower of London. They include crowns and other articles used at a coronation.
Colour Plate. Symbols of Royalty, **10,** *Frontispiece.*

Inst. means instant. "Yours of the 18th inst." would refer to your letter of the 18th of the present month.

Institute. A society formed to encourage art, literature or science. The word is also used of a building in a town or village erected to help in the social life of the place by providing books and recreation.

Insulated means separated or protected by a substance which does not conduct heat or electricity. The conductors in electric cables are insulated with coverings of paper, rubber or gutta-percha.
Cold-storage chambers are insulated against heat by walls packed with slag-wool, sawdust, etc. For supporting bare electric wires the porcelain insulator is used.

Insulator. A non-conductor of electricity. A device used to prevent the escape of electrical current.
Pictures. Fireworks round an Insulator, **6,** 146
Types of Insulators, **6,** 217, 296

Insulin. A drug made from a substance extracted from the pancreatic glands of oxen. It is used in the cure of diabetes and was discovered in 1922 by Dr. F. G Banting (*q.v.*) and his colleagues, Dr. McLeod and Dr. Best, **7,** 388

Insurance. An insurance company bases its charges or rates upon the law of averages There is practically no eventuality against which one may not insure, but the main business in this direction is embraced by life insurance, accident, fire, marine and liability insurance
The document setting forth the agreement between the insurance company and the insured person is known as the policy, the periodical payments being called premiums
Insurance of ships, **5,** 270

Intelligence Tests. There are many systems of mental tests in use to-day for estimating the natural or the acquired ability of both children and adults Problems are usually set in such a way that there is only one correct answer, though certain tests are designed which require trained psychologists to devise and interpret correctly The more simple tests when examined by experts show the mental ability or special aptitudes of the person tested In testing school children a standard is taken, known as the I.Q. (Intelligence Quotient). The average I Q is 100, very bright children vary from 130 to 180.
Tests for Army recruits may be designed to show the natural mechanical ability, or general aptitude The first large scale intelligence tests were made by the U S A. in 1917 when two million men for the armed forces were submitted to the Alpha Test.

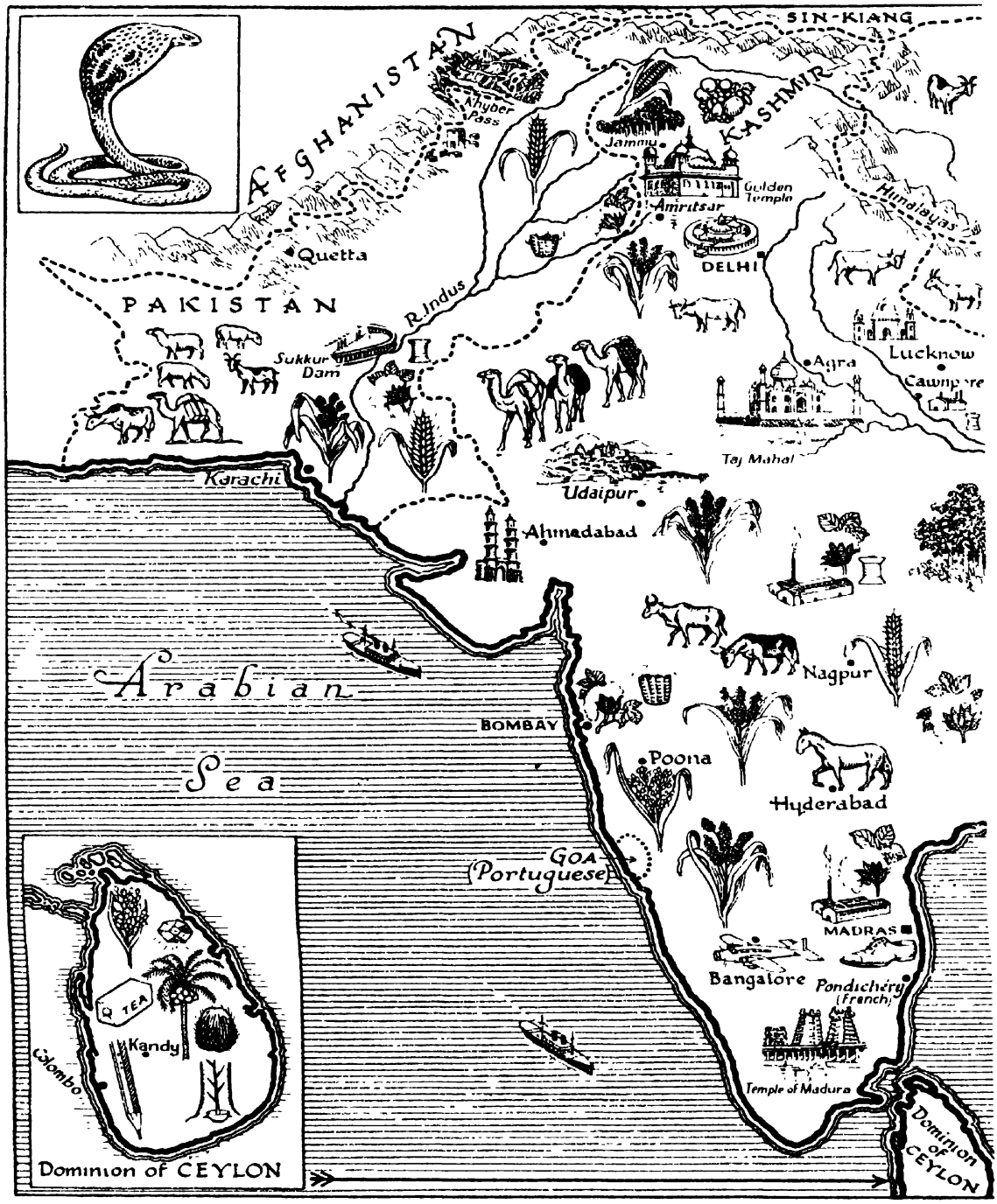
Interdict means an order from the Pope that churches be closed and no services held. Such an order was made in the reign of King John, **2,** 104

Interest is the sum paid for the lodgment of money. Money on deposit in the Post Office Savings Bank earns interest at 2½ per cent per annum, *i.e.*, 6d. in the £ a year.
This type of payment is known as simple interest. Compound interest is paid when simple interest already earned is added to the principal.

Interlaken is a town of Switzerland in the Canton of Berne. It is a favourite tourist centre, **4,** 62

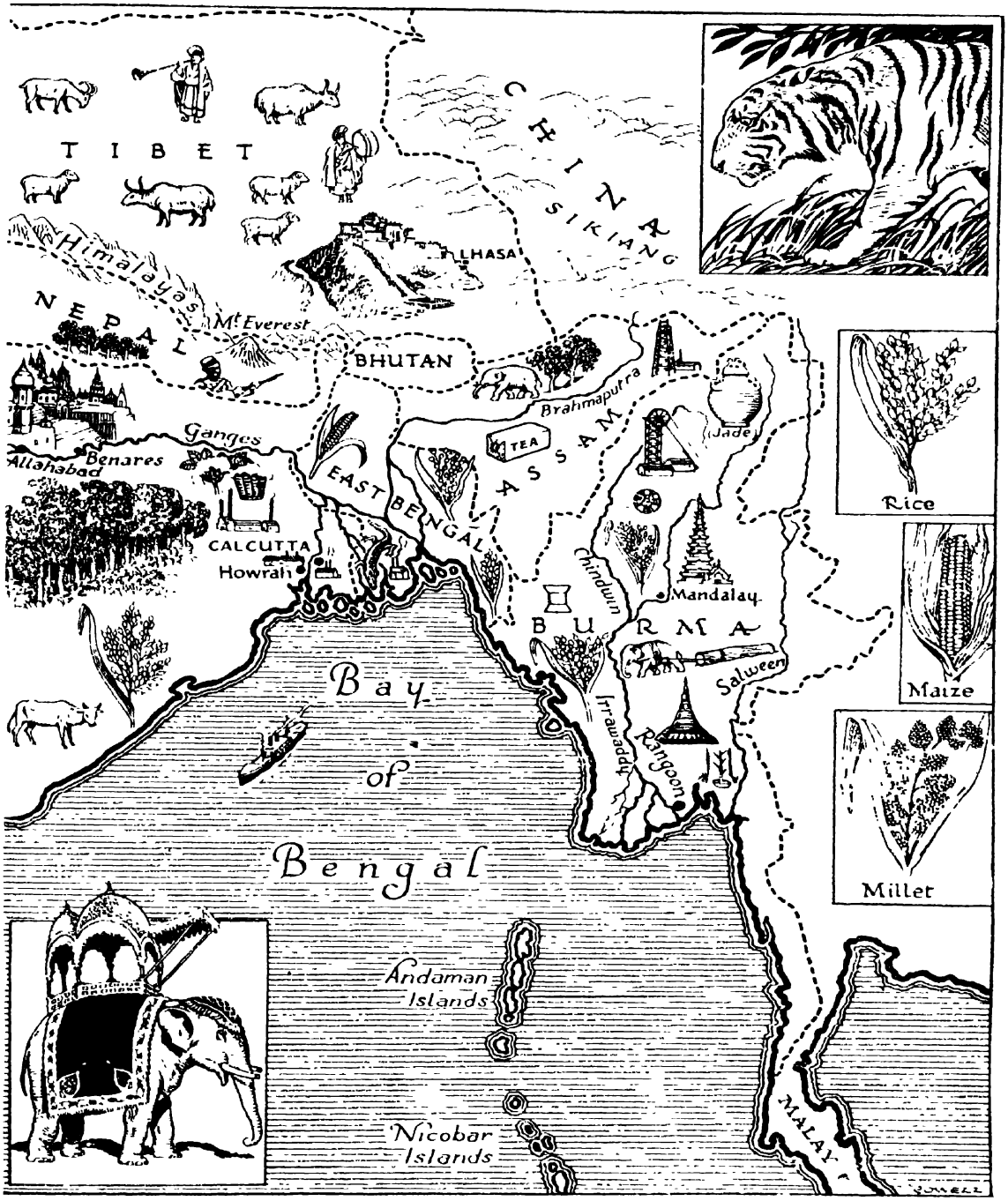
Internal Combustion Engine. A type of engine driven by petrol. It was largely due to its introduction that the motor car and aeroplane (*q.v.*) became possible.
How the engine works, **5,** 167 *et seq.*
Sketch Plan: **5,** 169

DOMINIONS OF INDIA,—



India is a sub-continent of Southern Asia ; in 1947 it was divided into two Dominions which were named India and Pakistan, both members of the British Commonwealth of Nations. The Dominion of India comprised many of the old Provinces, with the Andaman and Nicobar Islands, while practically all the Princes' States have now joined the Indian Union, under agreements and treaties. The capital of the Union is Delhi. Pakistan comprises Baluchistan, Sind, the North-west Frontier Province, west part of Punjab, and, in the east, the eastern half of Bengal and the

—PAKISTAN AND CEYLON



Specially drawn for this work.

Sylhet district of Assam The capital of Pakistan is Karachi Ceylon, the large island off the south-east tip of India, was a British colony until 1948 when it became a British Dominion. The capital and chief port of the island is Colombo, while Kandy, the old capital of kings, is still an important [illegible] time, and it ceased to be [illegible] In January, 1948, the independence of Burma was recognised [illegible] ember of the British Commonwealth of Nations.

International. Carried on between nations; affecting nations. International law is law concerned with the relations of nations, or which is observed by common consent of nations.

International Danube Commission was appointed in 1921 to manage the great eastern European river of the Danube. Since the Second World War, the form of control which the Danube shall have has been a matter of dispute, **4**, 88

International Date Line. This is a line drawn along the 180th meridian, with some slight modifications, where the change of date occurs, **9**, 301

International Grand Prix Race is a race in which racing motor cars engage. Many speed records have been made at various times by cars taking part.
Pictures: **5**, 172, 173

International Office of Health was first set up in 1907. Nowadays, the United Nations Organisation has a World Health Organisation to whose constitution over 30 states subscribe, **2**, 228

Inter-planetary Journeys. Journeys to the moon and other planets may become possible by the use of rockets, **5**, 242 *et seq.*

Interpret means to explain the meaning of; to translate. When we go abroad we sometimes have to call in the help of an interpreter, that is, one who explains in one language the meaning of what is said in another language.
An actor interprets a part when he so acts as to express what he considers to be the meaning of the author of the play

Intersect. To cut across; to divide up into parts. A point where two roads intersect each other is called a cross-roads.

Interstellar means between the stars. Though the stars seem close together, the stretches of interstellar space separating them are inconceivably great.

Intestate. When a person dies without making a will, his estate is said to be intestate.

Intrepid. Fearless; bold; absolutely unafraid in the face of danger. Explorers are intrepid pioneers.

Invader. One who enters by force with a view to conquest or plunder, or to do harm. First the Romans, then the Saxons, then the Danes, and finally the Normans, were invaders of this country at different periods early in our history.

Invalides, Hotel Des. A famous hospital and home for wounded soldiers and also used as a military museum in Paris. Beneath its dome rest the remains of Napoleon and those of Marshal Foch, **2**, 207; **4**, 12

Invar is the name given to an alloy of nickel and steel used for measuring tapes and clock pendulums. It remains invariable at all heats, **6**, 108

Invasion of Britain was last made in 1797 when a French force landed in Fishguard Bay but surrendered to the local militia and other partially armed countrymen, **9**, 326

Inventions and Discoveries, Modern. How Radar, Penicillin, etc., were discovered, **7**, 389 *et seq.*

Inventory. A list of goods and chattels. Such a list would be prepared before one took possession of a furnished house.

Inverary, standing on Loch Fyne, is the capital of Argyllshire, Scotland. It is a centre of the fishing industry.

Invercargill. A town of New Zealand at the south of South Island. It is an industrial and meat-exporting centre, **3**, 263

Inverness is the county town of Inverness-shire, Scotland. It is a seaport and centre for railways and has many industries, **3**, 128

Inverness-shire. A county of the Highlands of Scotland. Its chief rivers are the Spey, Findhorn and Ness and it has many mountains, including Ben Nevis. There are deer forests and many moors, whilst the county is crossed by the Caledonian Canal.

Investigator was the name of the ship in which John Franklin served on an exploration of Australian coasts, **2**, 301

Invisible Rays. About the "electric eye" and its many practical uses, **6**, 233 *et seq.*
Pictures: Two Uses for Photo-Electric Cells, **6**, 233
More Uses for "Electric Eyes," **6**, 235
An Automatic Lamplighter, **6**, 234

Invoice. Commercial term for the statement sent by the seller to the buyer of goods. This statement gives full particulars of quantity and price

Io is the name given by astronomers to one of the four satellites of the planet Jupiter discovered by Galileo, **8**, 151

Iodine. A non-metallic chemical element (symbol I). It is found in seawater, seaweed, etc. The tincture is much employed as an antiseptic and first dressing for wounds. Some of it is prepared from the nitrates of Chile, **4**, 323

I.O.M. means Isle of Man.

Iona is an island at the south-west of Mull on the west coast of Scotland Here St. Columba built his church, **3**, 139
Picture: **3**, 139

Ionian Sea is a sheet of water on the western side of Greece. It includes many islands such as Corfu, Cephalonia and Zante.

Ionic means something relating to Ionia or the Ionians. The Ionia of the ancient Greeks covered part of the western coast of Asia Minor, settled in the tenth century before Christ by colonists from Central Greece.
The Ionians developed the Ionic style of architecture.
Pictures: **7**, 291; 293

Iota was the name given to the letter I by the ancient Greeks.

I.O.U. (I owe you). Merely an acknowledgment of money lent. It should set out the date when the loan was granted, the amount, the name of the borrower and that of the lender.

I.O.W. means Isle of Wight.

Iowa is one of the north central States of the U.S.A. It is an agricultural country with much prairie land. Des Moines is the capital.
Pictorial Map: **4**, 290

Ipecacuanha. A medicine produced from the twigs of a tree growing in moist forests of Northern Brazil, **1**, 334

Ipoh. The great tin-mining city of Malaya. There are many Chinese and Indians among its population, **3**, 403

Ipoh is the name of a tree growing in Borneo. From its sap natives brew poison for the tips of their blow-pipe darts.
Picture. **2**, 329

Ipswich. Town and seaport of Suffolk, on the Orwell Makes agricultural implements and has iron foundries, **3**, 62 and 65
Picture At Cliff Quay, Ipswich, **6**, 301

Ipswich is a town of Queensland, Australia, to the south-west of Brisbane Coal is mined here and the town also manufactures rolling stock for railways, **3**, 236, 240

Iquique is one of the chief ports of northern Chile, **4**, 322

Iran. A kingdom of Asia, known also as Persia. Its modern name comes from the Aryan tribes who lived in this part of Asia in ancient times and were raised to greatness by such leaders as Cyrus Modern Iran is an important source of oil and also produces wool, cotton, rice, and carpets The name Persia was officially displaced by Iran in recent years, but has now been restored owing to the confusion of Iran with the neighbouring country of Iraq. The capital is Tehran The population of Persia (Iran) is estimated at about 13 millions, **4**, 202 *et seq.*, 368
the kingdom of Cyrus, **2**, 2
Pictures The Masjid-i-shah Mosque, **4**, 203
The Togrul Tower, Rhages, **4**, 204

Iraq is a kingdom of the Middle East, the greater part of which is formed by what was called Mesopotamia, *i.e.*, the area between the great rivers Tigris and Euphrates The principal city of Iraq is Baghdad and the country has a population of nearly 4,800,000. Oil is the most important product, **4**, 199 *et seq.*, 368
Pictures With the King of Iraq, **2**, 386
Relics of a Proud Parthian City, **4**, 199
A Gateway of Kadhiman's Sacred Mosque, **4**, 200
Baghdad's Blue Mosque, **4**, 201
A Moslem Place of Pilgrimage, **4**, 205

Irazu is one of the loftiest volcanic peaks in Costa Rica. It is 11,200 ft. high, **4**, 304

Irbit is the name of a fur trading town in the east Ural country of the Soviet Union, **4**, 110

Ireland is one of the British Isles It has two political divisions: (1) Northern Ireland which is still part of the United Kingdom, comprising six of the nine counties of Ulster: Antrim, Armagh, Down, Fermanagh, Londonderry, and Tyrone; and (2) the Republic of Ireland (formerly Eire), which is the rest of Ireland, a self-governing and independent state, whose capital is Dublin.
Belfast is the capital of Northern Ireland. See *Beautiful Ireland*, **3**, 141 *et seq.*

Ireland, John (born 1880) British musical composer. His music has great perfection of form, **7,** 193

Iridium. A very hard and brittle white metal, one of the elements. It resembles platinum in appearance and is found in the same places. Like platinum, too, it is able to stand great heat without melting, is very heavy and very costly.
The world's standards of length and weight are made of a mixture of the two metals, **6,** 135

Iris. A large family of plants of many different types, both cultivated and wild. (*p.h.*)
Colour Plate British Wild Flowers, **1,** *between* 304 and 305 (Plate 2)

Iris was the messenger of the gods, after whom the flower is named, **1,** 300

Irish Free State. The former name of the Republic of Ireland given to the southern counties of Ireland when they became a self-governing dominion in 1922. From 1937 until 1949, the Free State was known as Eire, **2,** 241, 412; **3,** 152 *et seq.*

Irish Home Rule. Irish politicians led the Home Rule Movement in the latter half of the nineteenth century in an attempt to win from Britain some measure of Ireland's ancient independence The problem lasted into the twentieth century when the Sinn Fein [illegible] (1916) heralded the coming of the Irish Free State which is now the independent Republic of Ireland Northern Ireland, however, remains loyal to the Commonwealth, **2,** 241, 412

Irkutsk is a town of Siberia, in the Soviet Union. It stands on the great Trans-Siberian Railway

Iron is both the commonest and the most useful of metals It is an element (symbol Fe) and occurs naturally in combination with oxygen and carbon, as iron oxides and iron carbonates, from which it is separated by the intense heat of the smelting furnace In its cast form it is very brittle, owing to carbon and other impurities enclosed in it.
When these are worked out of it in a puddling furnace and by hammering, its character changes and it can be readily wrought into any shape or be welded, **6,** 41 *et seq.*
Pictures. An Ironstone Quarry, **6,** 41
An Early Blast Furnace, **6,** 42
The Modern Blast Furnace, **6,** 43
Keeping the Furnace Filled, **6,** 45
Tapping Britain's Largest Blast Furnace, **6,** 46
Running Into the Moulds, **6,** 47
Running Into the Casting Machine, **6,** 48
Filling a Ladle, **6,** 49
Ladle Crane in Action, **6,** 50
Cupola Furnace, **6,** 51
Moulding, **6,** 52, 53
The Puddling Furnace, **6,** 54
Colour Plate: A Blast Furnace in Action, **6,** *facing* 37

Iron Age signifies the stage of civilisation reached by a race when it becomes acquainted with the art of working iron. Some races attained their Iron Age before others.
The Bronze Age preceded the Iron Age, and the Stone Age preceded the Bronze Age, **9,** 4, 320

Ironbark Tree. Popular name of several species of Eucalyptus trees, but particularly to the red gum tree. They are found mainly in Australia. The red gum tree attains a height of 150 to 200 ft and is noted for its hard bark, durable wood, and for the gum it exudes.

"Iron Chink." This is the nickname of an ingenious machine used in the fish canneries of British Columbia and so called because it does work formerly done by Chinese, **3,** 172, 174

Iron-clad Vessels were first introduced into the Royal Navy in 1860. The first British iron-clad was the *Warrior* launched at Blackwall in that year, **8,** 12
Picture. The First British Iron-clad, **8,** 13

Iron Curtain. This term is sometimes used by people who wish to describe the boundary between the countries of western Europe and those of eastern Europe which, they say, is the outcome of entirely different political systems and beliefs in west and east.

Iron Duke. Name given to the first Duke of Wellington, who was victor in the Battle of Waterloo, **2,** 201

Iron Gate is the name given to a mighty gorge in the course of the River Danube, **4,** 94 *et seq.*

Iron Knob is the name of a great iron ore centre in South Australia, **3,** 236, 238

Ironsides was the name Cromwell gave to his picked troops, **2,** 162

Ironstone is the term applied to iron ore as it is dug from the ground.
Pictures: An Ironstone Quarry in Northamptonshire, **6,** 41

Iron Wood. A variety of timber found in many tropical forests, **1,** 322; **9,** 374

Iron, Wrought. See *Wrought Iron.*

Iroquois is the name of a tribe of Red Indians, **3,** 156

Iroquois Falls. A district of Quebec, Canada, where extensive lumbering is carried on.
Picture: **3,** 170

Irrawaddy is the great river of Burma and is about 1,300 miles in length. It runs almost the entire length of the country and is used as a water highway for about 1,000 miles of its course, **4,** 216
Pictures: A Sampan Rower, **4,** 216
Burmese Teak Rafts, **4,** 363

Irrigation is the supplying of water by artificial means to land that is parched and dry. Wells, canals and rivers are used as sources of water and the system is carried out in all the dry parts of the world where soil can be made productive. Descriptions of the methods employed, from irrigation trenches to the building of giant dams, are given in *Turning Deserts into Gardens,* **5,** 73 *et seq.*
Pictures: Giving a Drink to a Thirsty Land, **5,** 73
Delta Barrage on the Nile, **5,** 74
The Assouan Dam, **5,** 75
Watering Millions of Acres in India, **5,** 76
Looking Down on the Boulder Dam, Colorado, **5,** 77
Rough Water at the Sennar Dam, Egypt, **5,** 79
What Can Be Done By Irrigation, **5,** 80
Water for the Dry Lands (Australia), **5,** 81
Shasta Dam, California, **5,** 82
Two Million Gallons a Minute, **5,** 83

Irthlingborough is a town of Northamptonshire. It is a centre for foot wear.

Irvine is a seaport and town of Ayrshire, Scotland. It is a centre of heavy industries and shipbuilding, **3,** 122

Irvine, A. C. One of the heroes who gave their lives in the assault on Mount Everest, **2,** 392; **3,** 348

Irving, Sir Henry (1838-1905). His real name was John Henry Brodribb. A great English actor, he did more than any other man to raise the stage to its present high level.

Irving, Washington (1783-1859). Well-known American essayist and historian. He wrote of the voyages of Columbus, sketches of English life and biographies of Washington, Goldsmith and others. He also wrote *Rip van Winkle,* **7,** 273
Picture Rip van Winkle Returns, **7,** 270

Isabella was the wife of King Ferdinand V of Spain They gave support to Christopher Columbus, **2,** 275
Picture: **2,** 274

Isaco was a Mandingo guide of Mungo Park in his Niger exploration, **2,** 324

Isandhiwana was a famous battle of the Zulu War of 1879, **3,** 310

Isfahan is an ancient city of central Iran, or Persia, and contains such architectural wonders as the Royal Mosque of Shah Abbas.
Picture **4,** 203

Isis was the principal goddess of the Egyptians. She represented the Sun, whilst her husband Osiris represented the Moon. She wore the lotus on her head, the centre of her worship being at Memphis. The ruins of a temple dedicated to Isis may be seen at the wonderful city of antiquity, Petra, in the Transjordan, **4,** 190

Islands of Cloves is the name given to the two East African islands of Zanzibar and Pemba, **3,** 375

Island of Lemons is a name often given to *Sicily* (*q v.*).

Island, The Largest. Greenland, with an area exceeding 827,300 square miles, is the largest non-continental island; New Guinea (312,329 square miles) comes next and Borneo (290,000) third See also *Atlas Supplement,* end of this Volume.

Islay is one of the islands of the Inner Hebrides, **3,** 139

Isle of Ely. Now a part of Cambridgeshire, it was originally an island of the English Fenlands, **3,** 66

Isle of Logs is the meaning of the name of the Swedish capital, Stockholm.
Pictures: **4,** 43

Isle of Man. An island of the Irish Sea almost equidistant from England and Ireland. It is some thirty-three miles in length and has a breadth of twelve miles. It has its own Parliament, the Lower House being known as the House of Keys. The capital is Douglas (*q.v.*), **3,** 86, 90 *et seq* ; **9,** 357

Pictures: In the Isle of Man, 9, 360

Isle of Wight is situated off the coast of Hampshire, being separated from the mainland by the Solent and Spithead. It forms part of the county of Hampshire. Agriculture and sheep-grazing are the chief occupations, but it has many holiday resorts, including Sandown, Shanklin, Ventnor and Ryde while Cowes is a famous yachting centre. The capital of the island is Newport, 3, 37, 38; 9, 312
Picture: 8, 103

Isles of the Blest, also called the Fortunate Islands, were islands believed by the ancient Greeks to lie somewhere on the extreme west of the then known world.
To these islands went those happy mortals whom the gods exempted from death, and the souls of good men who had died.

Islet means a little island. The ending is a diminutive suffix, denoting something smaller than the thing meant by the root word itself. It is found in armlet, anklet and bracelet.

Islington is a borough on the northern side of London. It includes Holloway, Highbury, Kingsland, Barnsbury and Canonbury, all names of ancient manors. Horse and cattle shows are held at the Agricultural Hall in the district.

Ismailia. A town of Egypt, situated on the Suez Canal.

Isobars are lines drawn on a map through places which have the same average atmospheric pressure, 5, 21

Isotherms are lines drawn on a map through places which have the same average temperature, 5, 22

Israel is the name used to denote the Hebrew people of Biblical times, 2, 401 *et seq.*
Picture: 2, 403

Israels, Josef (1824–1911). A modern Dutch painter, he took secret lessons from local artists.
Picture: 7, 54

Israel, State of. The State of Israel was proclaimed in Palestine on 15th May, 1948, and Dr Chaim Weizmann (1874–1952) was elected its first president. Previously Britain had held Palestine under United Nations Trusteeship. Arab armies also entered Palestine on 15th May, and the United Nations sent a mediator to bring the fighting between Jews and Arabs to an end. Count Bernadotte, the UNO mediator, was assassinated, but his successor, Dr. Bunche, was able to arrange armistices. See also *Holy Land,* 2, 414; 4, 173, 183 *et seq.*

Istanbul is the largest city in Turkey and stands in the European part of the republic, on the shores of the Bosporus. It has a long history as the capital of the Byzantine Empire and then as the capital of the Ottoman Empire and contains many wonderful buildings dating from these times, 4, 159 *et seq.*
Pictures: The Mosque of Fatih, 4, 162
The Theodosian Walls, 4, 162
Photo-tone Supplement: The Continent of Europe, 4, *between* 112 and 113

Isthmian Games, like those of other Greek games (Olympian, Nemean and Pythian) included boxing, wrestling, racing and quoit-throwing. They took their name from the Isthmus of Corinth, where they were held.

Isthmus. A narrow neck of land joining two larger areas of land. The Isthmuses of Suez and Panama each join two continents together. The Isthmus of Corinth links the southern part of Greece with the Continent of Europe.
All three have had ship canals cut through them.

Ital. means italics. "I am *determined* to win the race." The fact that the word *determined* is in italics gives emphasis. "Marie always calls her father *père*" Here the word *père* (father) is in italics because it comes from the French.

Italia was the name of an Italian airship which was lost in an attempt to fly over the North Pole, 2, 365

Italian North Africa comprised the colony of Libya which is bounded on the west by Tunisia and on the east by Egypt Tripoli is the principal town. The colony was occupied by the Allied forces during the 1939–45 war. After the war it became the first independent State to be created by the United Nations. King Idriss was proclaimed King of Libya on Dec. 24th, 1951, 2, 245

Italy. A republic of southern Europe whose northern parts extend into the Alps whence it goes southwards for some 700 miles rather in the shape of a leg, its western shore being washed by the Mediterranean and its eastern shore forming part of the coast of the Adriatic Sea. Italy is mainly an agricultural country, but in the north she has important industries including textiles (especially cotton and silk). She has considerable "white coal" from her hydro-electric plants. The capital is Rome and the population numbers about 46 million, 4, 149 *et seq.*, 364
—Hannibal in Italy, 2, 66
Pictures: An Old-time Rock-built House, 4, 139
The Ponte Vecchio, Florence, 4, 140
Built by a Roman Emperor, 4, 141
Ruins of the "Eternal City," 4, 142
Outside the Pantheon at Rome, 4, 143
Along the Appian Way, 4, 144
Vesuvius and Pompeii, 4, 145
The Leaning Tower of Pisa, 4, 146
At the Church of St. Francis, 4, 147
The Church of an Italian Monastery, 4, 148
The Wonderful Cathedral of Milan, 4, 149
On the Grand Canal, Venice, 4, 150
A City constructed in the Sea, 4, 151
Mountain Grandeur in the Dolomites, 4, 152
Nature Builds an Arch, 4, 153
Photo-tone Supplement: The Continent of Europe, 4, *between* 112 and 113
Colour Plate: St. Mark's Cathedral and Campanile, Venice, 4, *facing* 61

Itasca. A lake in Minnesota, U.S.A., whence flows the great river Mississippi, 4, 292

Itchen. One of the rivers of Hampshire, it flows into Southampton Water, 3, 36

Ithaca, of which Odysseus was king, is one of the Ionian islands of Greece. Its present-day name is *Thiaka,* 5, 373

Ivan the Great made Moscow the Russian centre of government and expelled the Mongols. He ruled from 1462 until 1505, 2, 406

Ivan IV. See *Ivan the Terrible.*

Ivan the Terrible (1533–84). The son of Basil III, Autocrat (ruler) of Muscovy. He was crowned Tsar in 1547 and was the first Russian ruler to take this title. He got his name from the ferocity with which he fell upon his enemies and from the insane fury which came upon him in his later years, 4, 105
Picture: 4, 111

Ivory. Usually obtained from the tusks of elephants, the hippopotamus and other animals An elephant's tusks may be 9 ft. or 10 ft. in length and weigh over 200 lb.
Ivory is used for piano keys, billiard balls, etc., 1, 66
Picture: 4, 368

Ivory Coast. Name of a colony belonging to France on the coast of West Africa. It produces coffee, rubber and much valuable timber. See *West Africa, French.*

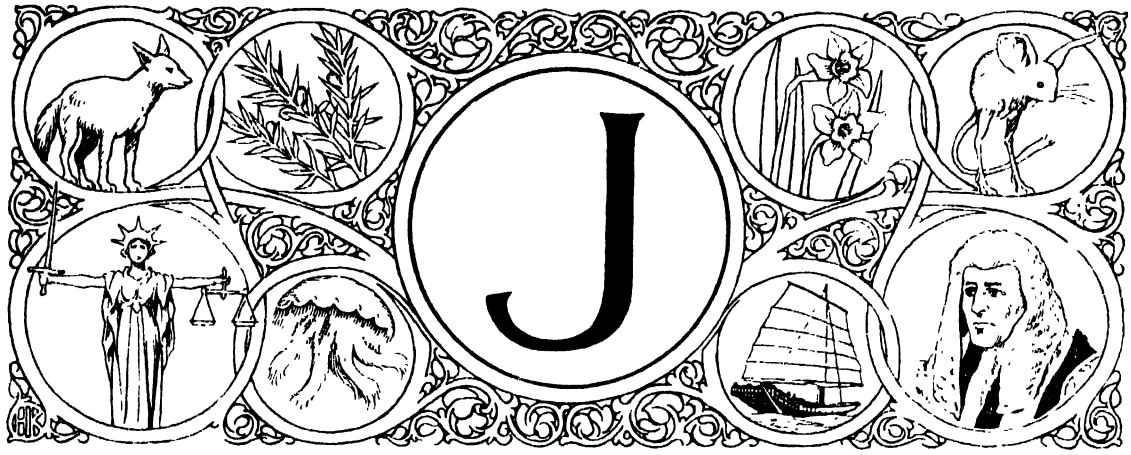
Ivy. A climbing evergreen shrub with dark green shining leaves *(p.h.)*

Ivy-leaved Toad-Flax is a wild plant often found growing on old walls. It has pale lilac flowers with yellow centres.

Ivy, Poison. See *Poison Ivy.*

Iyeyasu. He was a shogun, or military leader, who brought peace and prosperity to Japan in the seventeenth century. His shrine at Nikko is famous, 4, 256
Picture: At the Shrine of Iyeyasu, 4, 259

Izmit is the name of a paper manufacturing town of Turkey in the district of the same name, 4, 159



J is the tenth letter of our alphabet, and one of the two youngest, since, like U, it was added only about 300 years ago. The reason is that originally I was used for both the vowel and for this consonant; but presently for convenience sake J, the ornamental form of I, was assigned to the consonant.

In many languages the letter is not sounded like our soft G, but like Y. Thus, the German word "Junker" is pronounced Yunker; the Dutch "jas," yas; and so on. In Spanish, J has the sound of our hard H.

Doctors sometimes use little j in prescriptions instead of i; thus, six might appear as vj instead of vi. J occurs as an abbreviation for Justice in J.P. (Justice of the Peace).

Jacaranda. A tropical flowering hardwood tree, **3**, 228

Jack is the name given to small examples of the fresh-water fish *Pike* (*q.v.*).

Jackal. A night-roaming animal to be found in Asia and Africa. Known as the "animal dustman," **1**, 82
Picture: **1**, 82 (*p.h.*)

Jackal, Black-Backed. See *Black-Backed Jackal.*

Jack-Ass. Name often applied to a male donkey, **1**, 95

Jackass, Laughing. See *Kookaburra.*

Jackdaw. A black-plumaged British bird about 15 in. in length. In captivity it will often hide such bright objects as it may find, **1**, 166
Special Colour Supplement British Wild Birds, **1**, *between* 160 and 161 (Plate 2).

Jackeroos are the apprentice workers on the sheep farms of Australia, **3**, 214

Jackey Jacky was an Australian bush-ranger extremely skilled in escaping from prison, **3**, 206

Jack-in-the-Box. Name given to a rare fungus also known as the Earth Star.
Picture: **1**, 362

Jackson, Thomas Jonathan (1824-63). Known as "Stonewall," he was a Virginian who became one of the best-known Confederate Generals in the American Civil War.

Jackson, with vast cotton interests, is the capital of the State of Mississippi, U.S.A.

Jacobins are sometimes confused with Jacobites. The former were members of a famous society instituted at Versailles in 1789, which acquired its name from the fact that it met in the hall of an old Jacobin convent in Paris.
The society practically controlled the Revolution and originated the Commune of Paris. Its most prominent member was Robespierre, **9**, 326

Jacobites were the adherents of James II of England (Latin, *Jacobus*) after he had fled from his kingdom in 1688. They also gave support to his descendants, **2**, 173; **9**, 326

Jacobs, William Wymark (1863–1943). An English novelist who wrote many delightful books dealing mainly with the lives of sailormen of coasting vessels and little craft, including *Many Cargoes, The Lady of the Barge,* and *Light Freights*, **7**, 244
Picture: **7**, 246

Jacob's Pillow. Name given to the Stone of Destiny or Scone Stone, now under the Coronation Chair, **2**, 113

Jacquard, Joseph Marie (1752–1834). A famous Frenchman, he invented an ingenious loom which is named after him. It played an important part in building up the weaving industry, **6**, 341

Jade is a hard green stone, composed of magnesia, lime and silica, **9**, 404

Jaffa is a port of the Holy Land or Palestine known in ancient times as Joppa. It is famous for its oranges, **4**, 178, 186
Picture: **4**, 188

Jagersfontein is a town of the Orange Free State in the Union of South Africa. It is a centre for a diamond district.

Jaggery. A kind of sugar produced from dates, **1**, 311

Jag Mandir is the name of the island on which a palace is built on Lake Pichola, India, **3**, 342

Jaguar. Not unlike the leopard, this animal is found in Central and South America, **1**, 52
Picture: **1**, 56

Jaguarondi is the name given to a black or greyish wild cat of South America.

Jain is a religion of India much like that of the Buddhists and of great antiquity. Jain temples are very famous, *e.g.*, at Mount Abu, **3**, 325
Picture: A Temple of the Jains, **3**, 349

Jaipur is the name of a State of Rajasthan in the Union of India. Its capital is a city of the same name which has an ancient observatory, **3**, 342

Jamaica is the largest of the British islands in the West Indies. It is famous for its bananas and also grows sugar, ginger and other valuable crops. Kingston is the capital, **3**, 396 *et seq.*; **4**, 389
Pictures. Roaring River Falls, **3**, 389
Jamaican Tobacco, **4**, 387

Jama Masjid is the name of a great mosque standing at Delhi, India, **3**, 329, 332
Pictures: **3**, 336
—There is another Jama Masjid at Lahore built by the emperor Aurangzeb, **3**, 338

Jamboree is an American slang word equivalent to our "spree." It has been adopted by the Boy Scouts in the sense of a large gathering, at which displays and competitions are held. The Scouts hold World Jamborees in different countries for all nationalities.

James I (1566–1625), King of Scotland as James VI he succeeded Elizabeth on the English throne and became King of Great Britain. He was the earliest of the Stuart sovereigns, **2**, 152, 154, 155 *et seq.*, 406, 407
—he tried to encourage a national silk industry, **3**, 7
—introduced coal to Westminster, **6**, 7

James II (1633-1701), King of Great Britain and Ireland. He gave up his throne and fled abroad in 1688, **2**, 171, 172, 408
Picture: The Duke of Monmouth Pleads for His Life, **2**, 171
Flight of King James II, **2**, 175

James I (1394–1437), King of Scotland. He was for a time a prisoner of the English.

James II (1430–60), King of Scotland. He was at war with England and lost his life at Roxburgh Castle.

James III (1451–88), King of Scotland.

He was a man of great culture, but his reign was warlike.

James IV (1473–1513), King of Scotland. He was killed at the Battle of Flodden.

James V (1512–42), King of Scotland and father of Mary, Queen of Scots, **2**, 152

James VI, King of Scotland, became King of Great Britain as James I (*q.v.*).

James Edward, Prince (1688–1766). The son of King James II, he was known to the Hanoverians as the Old Pretender. In 1715, there was a rising on his behalf and he landed in Scotland only to sail again for France when the rising collapsed, **2**, 180, 408

James, Henry (1843–1916). Well-known American author who became naturalised as a British subject. Wrote *Roderick Hudson*, and many other books.

Jameson, Rt. Hon. Leander Starr (1853–1917). A doctor and great friend of Cecil Rhodes. In 1895 he headed an unfortunate raid into the Transvaal.

Jamestown is the only town on the British island of St. Helena, famous as the place of Napoleon's exile.
Picture: **3**, 393

Jamieson, Alexander, is a well-known British artist of the Impressionist School.
Photo-tone Supplement: **7**, *between* 112 and 113

Jamrud is a town of the North-West Frontier Province of Pakistan, near which the Khyber Pass begins, **3**, 340

Jamshedpur. An important steel town in the Bihar province of the Dominion of India, **3**, 314
Pictures: The Tata Steel Works at Jamshedpur, **3**, 313
Off to the Smelting House, **3**, 314

Janiculum. A strong fortress on the banks of the Tiber for the guarding of Rome, **2**, 51

Janissary. A janissary was an infantry soldier of the old Ottoman, or Turkish, Empire. Janissaries were usually enslaved Christian children who were harshly reared to be the warriors of the Turkish Sultans, **4**, 90

Jan Smuts International Airport is being built near Johannesburg in the Union of South Africa, at a cost of £2,000,000. It will be the largest and most modern air terminus in South Africa when completed, **3**, 288

January River is a translation of the name Rio de Janeiro, the capital of Brazil and second city of South America. See *Rio de Janeiro*, **2**, 281

Janus was a two-headed god who was held in great reverence by the Romans and after whom January was fittingly named, as looking both backwards and forwards in time.

Japan. This island empire of the Pacific was, so the Japanese claim, founded by the Emperor Jimmu Tenno in 660 B.C. and is still ruled by his descendants. In 1941, Japan entered the Second World War and, after over-running much of Eastern Asia and many Pacific islands, was defeated by the Allies, surrendering to them in August 1945. Tokyo is the capital. The total population numbers more than 80 million. Products include many crops, especially rice. There are important fishing and textile industries and a steel and iron industry, **4**, 247 *et seq.*, 377
—attacks the U.S.A. fleet at Pearl Harbour, **2**, 252
—surrenders to the Allies, **2**, 257
Pictures: Summer in Japan, **4**, 247
Festival Time in Japan, **4**, 248
Kobe Harbour, **4**, 249
Sights and Scenes in Japan, **4**, 251
Where Life Goes on Unchanged, **4**, 252
Heir to the Japanese Throne, **4**, 253
Hiroshima Arises Again, **4**, 254
Recording Their Votes in Tokyo, **4**, 255
Largest in the World, **4**, 256
At the Shrine of Iyeyasu, **4**, 257
Japanese Youths Take an English Lesson, **4**, 258
A Tree Shaped Like a Boat, **4**, 259
Old and New in Modern Japan, **4**, 260
Colour Plate. Fishing Near Japan's Sacred Mountain, **4**, *facing* 205

Jararaca. Name of a snake found in Brazil.

Jarrah is the name of a tree of the eucalyptus family which grows in Australia. It is hard, close-grained and not unlike mahogany, **3**, 220, **4**, 394

Jarrow-on-Tyne. A town and port of County Durham noted for shipbuilding. At a monastery here lived the Venerable Bede, **2**, 84

Jason, in the myths of the Greeks, was the leader of the Argonauts to Colchis in search of the Golden Fleece, which was guarded by a sleepless dragon.
He succeeded by the help of Medea, daughter of the King of Colchis, and brought back both the Fleece and Medea, **6**, 85
Picture: **10**, 195

Jasper is a beautifully marked rock, used for ornamental purposes. It is mainly silica (oxide of silicon) and much the same as flint and quartz. The presence of oxide of iron and other chemicals gives it various colours, which are sometimes in bands, and in other cases wavy.
Jasper takes a high polish. Aberdaron, in North Wales, is noted for its jasper deposits.

Jasper National Park is the largest National Park in the world. It occupies 4,200 square miles of the Canadian Rockies and has wonderful scenery, **3**, 194
Pictures. Athabaska Glacier, **3**, 188
Jasper Park Lodge, **3**, 191
Colour Plate: In Canada's Greatest National Park, **3**, *facing* 196

Jassy is a town of Rumania, on the River Prut. It is an important trading centre for many commodities.

Jaunting Cars are two-wheeled vehicles characteristic of Eire and Northern Ireland. The driver sits facing the horse, but his passengers are accommodated on seats facing sideways.
See *Vehicles*.

Java is a large island of Indonesia inhabited mainly by the Javanese and Sundanese peoples. It has mountains and forests and produces crops of many kinds. Coal is mined. Batavia is the chief town. See *Indonesia*, **4**, 250, 374

Java la Grande was the name given to Australia in a map of 1536, **3**, 200

Jay. A large British bird noted for the vivid blue plumage on its wings. Found largely in woods, though partial to gardens.
Colour Plate: British Wild Birds, **1**, *between* 160 and 161 (Plate 2)

Jazz is a type of dance music which originated among American negroes and was taken up by composers all the world over.
The chief characteristic of jazz is syncopation; that is, displacement of the regular beats in the bar, and varying rhythms.

Jeans, Sir James H., O.M. (1877–1946), a famous astronomer and mathematician. President of the Royal Astronomical Society 1925–27. Apart from his discoveries and technical works he was a lucid writer whose books on the history and composition of the universe attained great popularity among ordinary readers. His best-known book *The Universe Around Us*, did much to explain the wonderful advances of Science to the non-scientific public anxious to understand the importance of the new discoveries made by the scientists

Jebel Tarik was the early name of the rock of Gibraltar. It meant Hill of Tarik and was so called from Tarik, an Arab corsair, who built a fortress there in A.D. 711, **4**, 131

Jedburgh. A town of Roxburghshire, Scotland. It is noted for its woollens and tweeds and has the remains of a famous abbey.

Jefferies, Richard (1848–87). English novelist and writer on natural history. His story *Bevis* is still widely read, as is his book *Wood Magic*, **7**, 235, 271
Pictures: A Voyage of Adventure, **7**, 236
The Food Among Thieves, **7**, 237
Studying Wild Life, **7**, 238

Jefferson, a manufacturing city, is capital of the State of Missouri, U.S.A.

Jefferson, Thomas (1743–1826). A close friend and fellow worker with George Washington for American independence, he was President of the United States from 1801 until 1809. He wrote the famous Declaration of Independence, **4**, 261
Pictures: Independence Hall, Philadelphia **4**, 263
The Jefferson Memorial, Washington, **4**, 266

Jeffreys, Judge (1648–89). Infamous in history for the assizes he held in Somerset and Devon after the battle of Sedgemoor, **2**, 172, 408
Picture: Judge Jeffreys Threatens the Prisoners, **2**, 172

Jehangir (1569–1627) was one of the Moghul Emperors of India. His father was Akbar, **3**, 326

Jelabi is a sweetmeat beloved by Indian girls and boys, **3**, 336

Jellicoe, John Rushworth, First Earl (1859–1935). Joined the Royal Navy in 1871 and saw service in Egypt. Had command of the Grand Fleet during part of the war of 1914–18 and



Specially drawn for thi

The story of *Jason and the Golden Fleece* (see p. 194) is one of the classics of Greek mythology. Jason was the leader of the Argonauts who sailed to Colchis and, after many adventures, reached their goal where Jason fought two fire-breathing bulls, overcame powerful giants, and slew the fierce dragon which guarded the Golden Fleece. With Medea, daughter of the King of Colchis, Jason returned to his own countr , Thessaly, bearing the Fleece.



Specially drawn for this work.

Among the many stories in the *Arabian Nights* are those of the voyages of *Sinbad the Sailor* (*q.v.*). On his fifth voyage Sinbad was cast on an island where he helped the Old Man of the Sea by carrying him on his shoulders to gather fruit from the trees. Thereafter it was impossible for a long time to shake the Old Man off, but eventually Sinbad slew him and was free to escape.

became Governor of New Zealand, 3, 18

Jellyfish. Sea creatures which swim by opening and shutting their bodies. They have a fringe of fine threads with which they catch their prey, 1, 230. (*p.h.*)

—the sting of a jellyfish, 1, 232
Picture: 1, 232

Jena, Battle of (1806). At this battle Napoleon routed the Prussian army. Jena is a town near Erfurt in Thuringia in Germany, 2, 201; 4, 76

Jenghiz Khan (1162–1227) was a Mongol warlord who conquered China and swept across Asia. His name means "Perfect Warrior" and is also spelt Genghis Khan, 2, 268; 4, 230

—he sacked the Persian town of Rhages, 4, 204

Jenner, Edward, author of the poem, Signs of Rain, 9, 95

Jenner, Edward (1770–1823). He was born at Berkeley, Gloucestershire, and practised medicine. Noting that dairymaids seldom took smallpox, then a great scourge, he was led by experiments to his discovery of vaccination, 7, 380
Picture: 7, 381

Jequirity. The seeds of this plant are known as Crab's Eyes and used in certain disorders of the eye, 1, 334

Jerboa. A small rodent something like a kangaroo, found in south-eastern Europe, Northern Africa and other parts. (*p.h.*)

Jerboa Pouched Mouse. See *Hopping Mouse.*

Jerez de la Frontera is the name of a town of Andalusia, in southern Spain, and of the surrounding district which is famous for its vineyards. From the name Jerez comes our word "sherry," 4, 136

Jericho is a town of the Holy Land or Palestine, situated a little to the north-west of the Dead Sea, 4, 178

Jerome, Jerome K. (1859–1927). English writer, author of *Idle Thoughts of an Idle Fellow.* He made his name with the amusing story *Three Men in a Boat,* 7, 252

Jersey. The largest of the Channel Islands, popular as a holiday and residential centre. Well known for Jersey cows and for its early potatoes, tomatoes and other crops. The capital is St. Helier, 3, 52, 53
Pictures: A Fine Herd of Jersey Cows, 6, 380
Tales Told in Stone, 7, 284

Jersey City stands on the Hudson River in the State of New Jersey and is closely allied with New York City. It has iron, steel and other industries.

Jerusalem is the chief city of Palestine. It is upon a height and contains places holy to Christians, Mohammedans, and Jews. It was captured by Herod, King of Judea, in 37 B.C., 2, 402; 4, 175, 183

—it was wrested from the Turks during the Great War (1914–18), 2, 239
Pictures: The Temple Area, 4, 183
Looking Towards the Mount of Olives, 4, 184
In Modern Jerusalem, 4, 184
Photo-tone Supplement: Scenes in the Holy Land, 4, *between* 176 and 177

Jerusalem Artichoke. A vegetable bearing tall stems and producing underground tubers like a potato. White and pink vegetables.

—as a pest in the Argentine, 1, 338

Jervis Bay. Name of a ship which became an armed merchant cruiser on the outbreak of war in 1939. In November 1940 the convoy was in danger of attack from an enemy warship. The *Jervis Bay* gave battle against much superior odds and fought till she went down while the convoy was able to get safely away, 8, 36
Picture: 8, 40

Jessamine. There are many sorts. The variety *officinale* bears white, sweetly-scented flowers in summer; *nudiflorum* produces yellow blooms during mild spells in winter.
The first is a native of Persia; the second of China.

Jet is a kind of very hard coal, which takes a high polish. It is cut into ear-rings, beads, and other personal ornaments.
The best jet comes from Whitby, Yorkshire.

Jet-Propelled Aeroplane. The first British type of this aeroplane was flown in 1941. It was designed by Air Commodore Whittle. Further experiments have given the "turbo-jet" and "turbo-prop" engines, 5, 327 *et seq.*; 7, 400
Pictures; Britain's Fighter Aircraft, 5, 211
Jet Aeroplanes, 5, 216
Power Unit of a Jet-Propelled Aeroplane, 5, 217
Hawker P.1067, 5, 219
Vickers' Viscount Air Liner, 5, 231
Vickers' Viking Turbo-jet Air Liner, 5, 233
Bristol Britannia, 5, 239
The Vampire in Flight, 7, 399

Jetsam is the collective name of things thrown overboard to lighten a ship in distress; and must not be confused with flotsam, which signifies things left floating when a ship sinks, 9, 358

Jewels, Water. A Poem by Mrs. M. I. Butts, 9, 110

Jew-Fish. A form of Tarpon (*q.v.*) found off the coast of Florida. It is a giant fish, 1, 212
Picture: 1, 213

Jewish Synagogue at Jerusalem is one of the three chief religious centres of the Holy City.
Picture: 4, 184

Jew's Mallow is the name given to the pretty shrub Kerria.

Jhansi forms part of the United Provinces of India. It is a great cotton-growing district and has a capital of the same name.

Jhelum. A river of Kashmir, India, which flows down into the West Punjab to join the great River Indus. Its basin is a grain and fruit-growing area, 3, 312

Jibuti is a port on the Gulf of Aden. It is the capital of French Somaliland.

Jidda is the Red Sea port used by Moslem pilgrims on their way to the holy cities of Mecca and Medina in Arabia, 4, 206

Jih-pen. This is how two Chinese ideographs, or signs are pronounced. They mean "the place where the sun rises" and it is from this that the name Japan comes, 4, 247

Jimmu was the name of the first Emperor of Japan. He is said to have founded the Japanese Empire in 660 B.C. and is considered to have been a direct descendant of the Sun Goddess, 4, 247

Jing Paws is the name of a race of people living in the southern part of the Kachin Hills of Burma. They are included with the Kachins, (*q.v.*).

Jinja is a town and port of Uganda, on the shores of Lake Victoria.
Picture: 3, 370

Jinnah, Mohammed Ali (1876–1948). A leading Indian statesman, he became President of the Moslem League and worked for a separate Moslem state. His views were accepted and the Dominion of Pakistan came into being in 1947, Mr. Jinnah becoming the first Governor-General, 3, 312

Jinrickshaws is another name for *Rickshaws* (*q.v.*).

Jipijapa is the local name for a panama hat in Ecuador where they are made. See *Panama Hats.*

Joan of Arc (1412–31). The peasant girl who was an inspiration to the French during the long war against the English. She was eventually captured by her enemies, handed over to the English, and burned at the stake in Rouen market place, 2, 130, 404, 4, 7
Pictures: The Vision of Joan of Arc, 2, 129
Joan at Orleans, 2, 132
Joan at the Coronation of Charles VII, 2, 133
Where Joan of Arc was Born, 2, 134

Joan of Navarre was the second wife of King Henry IV. Henry V, her stepson, imprisoned her in Leeds Castle, Kent, for practising witchcraft.
Picture: 3, 36

Jo'burg is a familiar abbreviation of Johannesburg (*q.v.*) the great gold-mining and business centre of the Transvaal in the Union of South Africa.

Jodhpur. A state of Rajputana, in India. It is ruled by a maharaja and grows millet and cotton. Its capital is a town of the same name.

Joeys. Name given in Australia to young Kangaroos, 1, 80

Joffre, Marshal Joseph Jacques Césaire (1852–1931). Famous French military leader who commanded the French armies 1915–17, 2, 235

Johannesburg is the largest South African city south of the equator and is a great gold-mining centre of the Witwatersrand, 3, 289, 292; 4, 383
Pictures: In a Gold Mine, 3, 282
A Scene in the "City of Gold," 3, 284
Roedean Girls' School at Johannesburg, 3, 288
A Skymaster Over Johannesburg, 3, 289

Johansen, Lieut., of the Norwegian Naval Reserve. He made a dash for the North Pole with Nansen, 2, 357

John (1167–1216). King of England, he was nicknamed Lackland. His reign was in many ways disastrous, and he is generally regarded as one of the worst kings England has ever had. The barons forced him to sign Magna Carta in 1215, 2, 103 *et seq.*, 404

Pictures: Prince Arthur and Hubert, 2, 103
Sealing Magna Carta, 2, 106
Colour Plate: King John Sealing Magna Carta, 2, *facing* 101

John II. A famous King of Portugal who, in the fifteenth century, gave great encouragement to exploration, 2, 275

John, Augustus, O.M. (born 1878). One of the greatest of English artists. He has a close affection for the gipsies, 7, 116
Photo-tone Supplement: Lawrence of Arabia, 7, *between* 112 and 113

John Bull. Name used as a personification of the English nation as a body; first made popular by John Arbuthnot in political pamphlets in 1712 and now in universal use.

John Company was the name given in the early British occupation of India to the East India Company (*q.v.*) whose control in India was taken over by the British Government in 1858, 3, 345

John Dory. Name of a fish found in Mediterranean and Atlantic waters. It is an excellent food fish. Length about 20 in. when full-grown.
Colour Plate: British Salt Water Fishes, 8, *facing* 257

John-Go-To-Bed-at-Noon. Name given to the plant *Goat's Beard* (*q.v.*).

John, Knights Hospitallers of St. An order founded in Jerusalem in A.D. 1048 for hospital work, but recognised as a military order in 1118. After Palestine had been lost to the Saracens, the Knights of St. John took refuge in Rhodes, but were driven from there to Malta in 1523. The English Order of St. John of Jerusalem is descended from the original order.

John of Fornsete (died 1289). A monk of Reading Abbey, he wrote *Sumer is icumen in*, the first English song to be written down, 7, 157
Picture: 7, 158

John of Gaunt. See *Gaunt, John of.*

John o' Groats is the name given to a point at the extreme north of Scotland, upwards of 800 miles from Land's End. Here once stood John o' Groat's House, the site being now occupied by the John o' Groats Hotel, 3, 140

John of Lancaster. Another name for John of Gaunt, Duke of Lancaster (1340–99).
—he cut down forests in Scotland, 1, 325

Johnson, Miss Amy (1905–41). Pioneer British airwoman, she made a record flight to Australia. Lost her life whilst flying, 5, 205

Johnson, Samuel (1709–84). Remembered mostly for his great Dictionary which took eight years of hard work. His life by his friend Boswell is considered one of the best biographies ever written, 2, 411
Pictures: 7, 133, 139

Johnston, Sir Harry (1858–1927). Famous British explorer. He crushed the slave trade in East Africa.

Johnstone is a town of Renfrewshire, Scotland. Its main industries are mills for cotton, flax and paper, and it has collieries and engineering interests.

Johore is a state of the Federation of Malay. Its capital is Johore Bahru.
Picture: A Johore Rubber Plantation, 4, 365

Joint Stock Companies are trading and commercial concerns, the capital of which is subscribed by a number of persons. Most joint-stock companies are "limited liability" companies, as shown by the word "limited" after the title.

Joist. A beam or girder. An ordinary house floor is supported by a number of wooden joists, resting at each end on the walls, and arranged with their wider faces upright. The floor boards are nailed to their upper edges, and laths for a ceiling to their lower edges. Where very heavy loads have to be carried, as in warehouses and other large buildings, steel joists are used.

Joliba was the name given to a vessel used by Mungo Park of the Niger, 2, 324

Jones, Inigo (1573–1652). One of the greatest of English architects, he designed the King Charles block of Greenwich Hospital and many London buildings, 7, 314

Jones, Sir Harold Spencer, F.R.S. (born 1890). Astronomer Royal since 1933. Chief Assistan. at Greenwich Observatory 1913–23; Astronomer at Cape of Good Hope Observatory 1923–33, when he succeeded Sir Frank Dyson at Greenwich.

Jonquil is a form of the bulbous plant narcissi, having a sweet perfume. (*p.h.*)

Jonson, Ben (1573–1637). Poet and dramatist and friend of William Shakespeare, 2, 154, 7, 131; 9, 339

Joppa. See *Jaffa.*

Jordan is a river of Palestine. It empties into the Dead Sea after passing through the Sea of Galilee, 4, 173 *et seq.*, 186
Photo-tone Supplement: Scenes in the Holy Land, 4, *between* 176 and 177

Jordan Almonds. The long almonds which are commonly eaten with muscatels or raisins. They come from Malaga, in Spain, and not from Palestine.

Jordans is the famous old Quaker meeting-house and burial-ground in Buckinghamshire. The ground was acquired in 1671 and the house erected in 1688, 2, 171

José. He accompanied his fellow Portuguese trader, Pedro Baptista, on a journey across Africa from Angola to the Zambesi, 3, 276

Josephine, Empress (1763–1814). She was a widow before Napoleon married her in 1796. She was crowned along with Napoleon in 1804 but was divorced from him in 1810 and she spent the remainder of her life in retirement.

Joseph of Arimathea. A wealthy Jew who became a secret disciple of Christ. After the Crucifixion he persuaded Pilate to allow him to bury Christ's body in his own tomb. According to tradition he brought the Holy Grail to Britain and settled at Glastonbury where he built the first church in this country, 3, 58
—his hawthorn staff, 1, 411

Josephus, Flavius (A.D. 37–100). He was a Hebrew historian who, in the year sixty-seven, fought bravely against the Romans.

Joshua Tree. Name given to a species of Yucca (*q.v.*) which is found in California. Its botanical name is *Yucca Brevifolia.*
Picture: 4, 289

Jostedalsbrae is the name of a glacier in Norway. It is one of the largest glaciers in Europe.
Picture: 4, 40

Jostedalsbreen. See *Jostedalsbrae.*

Jotunheim, meaning Giant's Home, is the name given to a mountain region of Southern Norway, 4, 36

Joule, James Prescott (1818–89). Born at Salford, he discovered that heat can generate force. His chief studies were magnetism and electricity, 7, 361

Journal means a daily record of events; a newspaper published daily or at regular intervals. Many people keep a private journal or diary in which they set down things of interest to them. The word is used in a more general sense to describe a periodical publication appearing at regular intervals. A journalist is a person whose business is journalism, which covers editing a journal, being on the literary staff of one, or writing articles or other matter for journals.

Journey in imagination from the earth to the sun, 8, 115
—and to the moon, 8, 133
Picture: 8, 116

Jowitt, William Allan, Viscount (born 1885). A distinguished lawyer who has held office as Solicitor-General, Attorney-General and Paymaster-General; he was Lord Chancellor 1945–51. Created an Earl, 1951.
Picture: The Judges Attend Westminster Abbey, 9, 69

J.P. means Justice of the Peace, an unpaid magistrate. See *Magistrate.*

Juan de Cartagena was one of the rebels who opposed Magellan, 2, 283

Juan Fernandez is the name of a group of islands in the South Pacific. They belong to Chile. It was on one of these islands that Selkirk, the original "Robinson Crusoe," lived, 2, 319; 3, 398; 4, 324

Jubbulpore is a district of the Central Provinces of the Dominion of India, and is the name of the chief town of that district. It is a commercial centre and railway junction, 3, 323

Jubilee Class. Name of a type of express passenger locomotive used on the line formerly known as the L.M.S., and now in the London Midland Region.
Picture: 5, 131

Jubilee, Diamond. See *Diamond Jubilee.*

Judea was the ancient kingdom of the Jews in the Holy Land in Biblical times, 2, 402

Judges are appointed to preside over the Courts of Law which try cases beyond the power of the lesser courts presided over by magistrates—the County Court for civil cases, the Quarter Sessions and Assizes for criminal cases. The Chief Judge is the Lord Chief Justice, but the Lord Chancellor, who presides over the House of Lords, is the head of the judicial service, 9, 71, 74. (*p.h.*)
Pictures: The Judges Attend Westminster Abbey, 9, 69
A Judge on Circuit, 9, 71

Judo. Name used for a modern form of Ju-jitsu (*q.v.*).

Juggernaut is another name for the Indian god Krishna meaning "Lord of the World." His temple in Orissa is the scene of an important festival in which a colossal car is dragged to the temple. On many occasions by accident or in religious frenzy people have been crushed by the wheels of the car. Thus the word Juggernaut is used for any institution or system which crushes people out of existence.

Jugoslavia. See *Yugoslavia.*

Ju-Jitsu, a Japanese system of attack and defence in personal combat, with a knowledge of which inferior muscular strength may, by sheer skill, prevail against brute force.
The modern form of Ju-jitsu, known as Judo, is mainly concerned with throwing an opponent, and cultivates suppleness, quickness and a good balance.

Julier is the name of a pass in the Grisons canton of Switzerland over the Albula range of the Alps. The pass is dominated by the peak of Piz Julier, 11,106 ft. high, and is itself at a height of 7,504 ft., **4,** 56

Julius Cæsar (102–44 B.C.) One of the greatest Romans, he is outstanding in the history of the ancient world
—the most famous Roman, **2,** 75
—the landing of Julius Cæsar, **2,** 79; **9,** 21
—his birth and conquests, **2,** 402
—in Gaul, **4,** 5
—he studied oratory at Rhodes, **4,** 158
Pictures: The Circus Maximus, **2,** 75
The Rubicon to be Crossed, **2,** 76
The Ides of March, **2,** 77
The Murder of Cæsar, **2,** 78
The Coming of the Romans, **2,** 79
The Forum of Cæsar, **7,** 295
Julius Cæsar Comes to Britain, **9,** 22
A Roman Villa in Somerset, **9,** 23
Colour Plate: Julius Cæsar Crossing the Rubicon, **2,** *facing* 69

Jumbo. This is a machine widely used in the woollen industry for drying the wool after the washing process, **6,** 365

Jumna is a river of Northern India which rises in the Himalayas. After a course of 860 miles it joins the Ganges, **3,** 326

Jumping Fish. Long-bodied fish found at the mouths of many rivers in the tropics. Their fins are developed almost like feet. They can not only walk on the river-bed, but can jump to the land and even climb trees.

Jun. or Jr. means junior.

Junction. A place or point where things meet or join up. Travellers by rail often have to change at a railway junction, where two or more railway lines meet.

Juneau, Alaska. The capital of its country and the largest town. It is an important gold-mining centre. Not far away is the famous Mendelhall Glacier.
Pictures: The Glacier, **1,** 39; **4,** 294, 296

Jungfrau is the name of a mountain of Switzerland. It rises to a height of more than 13,000 ft., **4,** 62
Picture: **4,** 55

Juniper. A coniferous evergreen shrub. The common juniper bears dark berries yielding oil of juniper, **1,** 414. (*p.h.*)

Junk is the name given to a Chinese vessel. It may have two or three masts, with lateen sails and has often a high poop (*p.h.*)
Picture **4,** 238

Junkers 86. German high altitude aeroplane equipped with Diesel engines, **5,** 224

Junket is fresh milk treated with rennet and afterwards sprinkled with nutmeg and sugar. Devonshire is famous for its junket.

Juno is the name of a goddess of ancient Rome. She was the wife of Jupiter, **2,** 59; **5,** 348

Jupiter is the largest of the planets. It has nine satellites and a mysterious Red Spot. Some 86,000 miles in diameter, it is nearly eleven times larger than the earth and is situated 483,000,000 miles from the sun, round which it revolves in just under twelve years, **2,** 387, **8,** 149
Pictures: The Great Red Spot of Jupiter, **8,** 152
The Greatest Planet, **8,** 153
A Rare and Beautiful Sight, **8,** 155

Jupiter was the chief god and King of Heaven among the ancient Romans. He corresponded to the Greek "Zeus," **5,** 348
—a great temple to him is in the ruined city of Baalbek in the Holy Land.
Picture: **4,** 180

Jura is one of the islands of the Inner Hebrides, **3,** 139

Jura. The name of a range of mountains running along the north-west frontier of France and Switzerland and continuing in a north-easterly direction on the far bank of the Rhine as the German Jura, **4,** 5, 70

Jurats are life-elected members of the Royal Courts in the Channel Islands, **3,** 53

Jury. The system of trial by jury is a striking feature of the English system of law. A jury consists of twelve men and women who sit in Court, hear all the evidence and the judge's "summing up" of the case, and then decide whether a person is "guilty" or "not guilty." The judge, however, imposes the sentence. Juries sit on all cases in the Court of Quarter Sessions and the Assize Courts, **2,** 100; **9,** 71, 338
Picture: **9,** 336

Jury Mast. If a mast is damaged or lost on board ship its place is taken temporarily by a fitment known as a jury mast.

Justice means fair and upright conduct; the proper administration of the laws to ensure that right is done to all concerned. The statue of Justice is a figure armed with a sword and holding in the other hand the scales to ensure a fair balance. (*p.h.*)

Justice of the Peace. A person appointed as an unpaid magistrate by the Lord Chancellor on behalf of the Crown, **9,** 70, 337
See also *Magistrate.*

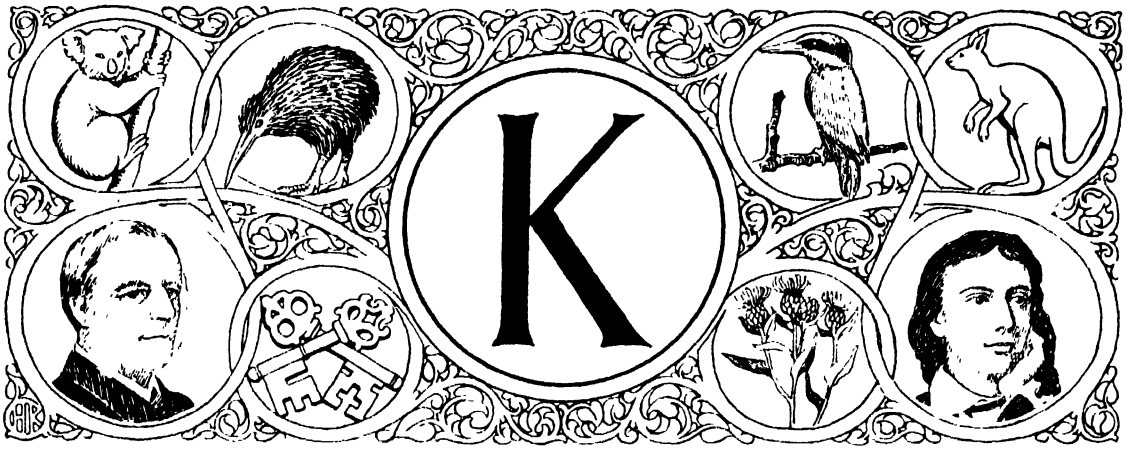
Justiciar. Name given in olden times to a principal officer of state. Hubert Walter was Justiciar, **2,** 103
—Hubert de Burgh was justiciar in the reign of Henry III, **2,** 107

Justinian the Great (483–562) A great Roman emperor he was able materially to extend his empire and his reign proved a great epoch in the history of Rome. His greatest work was the codification of Roman law which has exercised considerable influence in Europe, **2,** 403

Jute is a plant growing to a height of 11 ft. or 12 ft. in rich wet soil and is an important crop in parts of India. Its fibres are used for making mats, bags, sacks and rope.
Howrah, opposite Calcutta on the River Hugli, is a centre of the jute industry, **3,** 346; **4,** 370
Pictures: Baling Jute, **3,** 346
Jute for Calcutta and Dundee, **4,** 359

Jutes. A tribe from Germany. They invaded the south coast of England in the fifth century and established themselves in Kent.

Jutland is a peninsula of Denmark. Off these shores was fought the Battle of Jutland (1916) between the main fleets of Great Britain and Germany. The enemy's forces were so battered that they did not venture out again, **2,** 238; **4,** 46
H.M. King George VI was at the Battle of Jutland, **2,** 243



K is the eleventh letter of our alphabet, and one of the mute gutturals. It is formed by raising the tongue against the back of the palate, as you will discover if you make the sound.

The letter was used very little in Anglo-Saxon, but where it appeared it had the sound that it has now—that of a hard C. The Romans used it very seldom, and in modern Italian it does not appear at all. K becomes silent, or unpronounced, before N, as in "knave," "knee," "knight," or "knit."

Chemists use K as the symbol for the element potassium (kalium). K.G. is an abbreviation for Knight of the Garter.

Ka'aba is the name of the sacred Black Stone hidden by curtains which stands in the courtyard of the Great Mosque at Mecca. It is the focal point of Moslem pilgrimages to this holy city, **4**, 206
Picture: **4**, 206

Kabul is the capital of Afghanistan and is a centre where routes converge, **3**, 340

Kachin Hills. A district to the north of Burma, through which the River Irrawaddy flows.

Kachins. A race of people living in the Kachin Hills of Burma, **4**, 218

Kadhiman is a place of pilgrimage in Iraq a little to the north of Baghdad. It is one of the four chief shrines of the Shi'ite Moslems
Picture: **4**, 200

Kadifekalasi is the name of an old Crusader fortress in Syria, one of the many along the "Road of God"
Picture: **4**, 176

Kaffir. The name given to a tribe of the Bantu race of Negroes in South Africa and to the language which they speak, **3**, 278

Kafiristan. A mountainous province in the north-eastern part of Afghanistan. Pomegranates and olives grow on the lower slopes while pines and cedars flourish on the higher ground

Kagu. A bird, related to the bustards and sun-bitterns, which is found in New Caledonia.
Picture: **10**, 201

Kaieteur Falls is the name of a world-famous waterfall in British Guiana. The main fall drops 741 ft., **3**, 385

Kaikoura Range. The mountains of this name are in the north-east of South Island, New Zealand.
Picture: **3**, 259

Kailas Temple. One of the finest of the cave-temples of Ellora, India.
Picture: **3**, 324

Kaiser, The. *Kaiser* is the word used by Germans to mean "Emperor"; generally taken to mean one particular Emperor—Wilhelm II, who ruled Germany at the time of the First World War (1914–18). See *William II*, **2**, 233

Kaiseriych. An industrial town of Turkey in Anatolia. The cotton mill here is the largest in the Middle East, **4**, 159
Pictures: **4**, 355

Kaiserpfalz is the name of the old palace of the Holy Roman Emperors at Goslar, a town in the Harz Mountains of Germany. It dates from the reign of Emperor Henry III (1039–56), but has been extensively restored during the last century, **4**, 85

Kaiserslautern is a large industrial town of Bavaria, Germany.

Kalahari Desert is a district of Bechuanaland and South-West Africa. It has practically no water, though some parts are used for cattle raising, **3**, 286
—it was visited by Livingstone, **2**, 333

Kalamazoo, a town of Michigan, U.S.A., is an important industrial centre.

Kalat is the name of a state of Baluchistan and also that of its capital.

Kaleidoscope. A scientific optical toy. It is a tube with an eyepiece at one end and mirrors inside it.
When the tube rotates, pieces of coloured glass make changing patterns, **5**, 102

Kalgoorlie. A town in the goldfields of Western Australia, **3**, 205, 220
Picture: Kalgoorlie's "Golden Mile," **3**, 239
Pictorial Map: **3**, 242

Kalisz is a town of Poland on the River Prosna due west of the town of Lodz. Near this town is the model village of Liskow.
Picture: **4**, 124

Kalka, is in the East Punjab, India. It is a railway junction between Delhi and Simla, **3**, 337

Kali, in the Hindu religion, is the black goddess of darkness, **3**, 355, 359

Kalliste. This was once the name of the Aegean island of Santorin. It means "most beautiful," **4**, 166

Kalmuck. A member of the Kalmuck people who live in the Soviet Union on the shores of the Caspian Sea. Astrakhan is one of their chief towns. Although great changes have taken place in recent years and the Kalmucks are living a more settled life, many of them are still nomadic by nature, **4**, 112

Kaluga is an important industrial town and district of the Soviet Union in the vicinity of Moscow, **4**, 117

Kamakura is a place in Japan where one may see a bronze figure of Buddha, nearly 50 ft. high, **4**, 255

Kambove. A town in the Katanga province of the Belgian Congo and a centre of copper-mining, **3**, 300

Kamchatka. A peninsula of eastern Siberia and territory of the Soviet Union. It is very thinly populated and most of the people live by hunting and fishing, **1**, 361; **4**, 250

Kamet is a peak of the Himalayan Mountains rising to a height of more than 25,000 ft. The ascent has been made by a party of British climbers in 1931.

Kamloops is an industrial town of British Columbia and an important junction on the Canadian-Pacific Railway. It is built on the site of a fort first built by the fur traders about 1800.

Kampala. The commercial centre of the Uganda protectorate in British East Africa. It is linked by rail with the port of Mombasa, **3**, 370, 374

Kanat. A water channel in Persia. Kanats carry water underground from the mountain springs to the fields, **4**, 204

Kanchenjanga is the name of a peak in the Himalayas. It is 28,146 ft. in height, **3**, 348. Also spelt *Kinchenjunga.*

Kandahar is a town of Afghanistan on the main caravan road linking India with Persia. It is the capital of a

province of the same name and is celebrated in history for the great march made from Kabul by Lord Roberts, 1879–80, 3, 340

Kandersteg. A well-known winter sports centre in the Bernese Oberland of Switzerland. It is near the northern end of the Lötschberg tunnel, the important rail link from the Simplon via Brieg, Kandersteg, and Thun to Berne and western Europe, 4, 64

Kandy is the ancient capital of Ceylon and is about 75 miles north-east of Colombo at a height of 1,600 ft. above sea level. The old kings of Ceylon were known as the Kings of Kandy, 3, 366
Pictures: 3, 365

Kandy, Kings of. They were the former rulers of Ceylon and Kandy was their capital. The last Kandyan King ruled very early in the nineteenth century, 3, 366

Kang is a hollow brick bed used in China and other parts of the Far East. It is centrally heated by a fire and is used by the whole family during winter, 4, 239

Kangaroo. A pouched animal found in Australia and New Guinea. It possesses long hind legs and a powerful tail, 1, 78; 3, 245. (*p.h.*)
Pictures: Boxing Kangaroos, 1, 79
Pouch of the Kangaroo, 1, 78
Photo-tone Supplement: Wild Life in Australasia, 1, *between* 336 and 337

Kangaroo Rats are about the size of rabbits. The females have pouches for their young.

Kangaroo, Tree. This member of the family is found in New Guinea; a remarkable jumper, it lives in the trees.
Picture: 10, 201

Kano is a great trading city of Nigeria and capital of the province of the same name. It is ringed by adobe walls, but has modern buildings as well, 3, 380; 4, 384
Pictures: In the Walled City of Kano, 3, 382
Nigerian Cotton Sellers, 4, 379

Kansas is one of the Central States of the U.S.A. It is interested almost entirely in agriculture, but has also mineral wealth. Its capital is Topeka.
Pictorial Map: 4, 290

Kansas City is a town on the Missouri River, U.S.A., a railway centre with interests in agricultural products.

Kant, Immanuel (1724–1804). Of Scots descent, he was born at Königsberg. He was one of the greatest of philosophers, 7, 365
Picture: 7, 364

Kaolin. See *China Clay.*

Kapellmeister is a German word meaning director of music, 7, 158

Kapok. A fluffy fibre which is extremely buoyant and is used in lifebelts at sea; also for stuffing cushions, mattresses, etc. Oil obtained from the seeds is used in soap-making and for certain foods, 4, 370

Karabuk is the name of an iron and steel town of Turkey. The plant here was built by a British firm and started operating in 1939, 4, 159

Karachi is a great seaport and airport in the Province of Sind, and is the capital of the Dominion of Pakistan. It has an important salt industry and exports hides, wheat and cotton, 3, 312, 343 *et seq.*
Picture: 3, 343

Karapiro is the name of one of the dams on the Waikato River of the North Island of New Zealand. Its purpose is to harness the river to provide hydro-electric power.
Picture: 3, 266

Kara Sea is a stretch of the Arctic Ocean between Novaya Zemlya and the coast of Siberia. Merchant Adventurers reached thus far in their trading expeditions to Russia in the sixteenth century, 2, 305

Karasinghji was the name of a Maharana who befriended the British during the Indian Mutiny, and built a lovely Palace at Lake Pichola, 3, 342

Karens are a people of Burma. There are more than a million of them, 4, 218

Kariba Gorge is on the River Zambezi not far from the Victoria Falls but downstream. It is a possible site for a hydro-electric station for harnessing the waters of this river, 3, 300

Kartik occurs in the months of October-November and marks a great Hindu festival at Benares, 3, 345

Karl-Johans-Gade is the most famous street in Oslo, the Norwegian capital. It runs from the railway station to the Royal Palace, 4, 45
Picture: 4, 42

Karlsruhe is the capital of the province of Baden in Germany. It is a town of many manufactures, including railway locomotives and rolling stock.

Karnak, in Egypt, is the site of the Temple of Luxor and of Thebes, the ancient capital, 4, 196

Kaross is the name given by Zulus to the dressed skin of an animal, 3, 307

Karpacz is the name of a holiday resort in Polish Silesia.
Picture: 4, 124

Karri is the name of an Australian hardwood tree. It is a member of the eucalyptus family, 3, 220; 4, 394

Karroo. See *Little Karroo* and *Great Karroo.*

Karst. The name given to a region of Yugoslavia whose western parts are mountainous and barren. Cetinje is the chief town of this region, 4, 94

Karun Valley is in south-east Iran (Persia) and is one of the important oil regions of that country. The Karun is a river which flows into the Persian Gulf, 4, 202

Kasai is the name of a river of Central Africa. It flows between the Belgian Congo and Portuguese West Africa, 3, 300

Kasbah. A word used along the North African coast to indicate the citadel of a town, 4, 166

Kashmir. More properly called Jammu and Kashmir, this state is in the extreme north-west of India. It is a mountainous country, with agriculture and forestry as its main interests. The "Happy Valley," in the basin of the River Jhelum, is its famous beauty spot. The capital is Srinagar.
Pictures: A Scene in Kashmir, 3, 350
Travelling by Donga, 3, 350

Kashmir Gate is one of the entrances to and exits from the city of Delhi, India.
Picture: 3, 333

Kashmiris are the people of Kashmir, in north-west India, 3, 337

Katanga. A south-eastern province of the Belgian Congo and an important copper-mining and cattle region, 3, 300; 4, 384

Kato Kiyomasa. A celebrated sixteenth century general of Japan, known to his enemies as "The Devil Warrior." He directed the Korean War (1592–98) and was ruler of Haigo province under Iyeyasu.
Picture: At the Shrine of Iyeyasu, 4, 259

Kattegat is the name of a strip of water between Denmark and Sweden.

Katydid. A large green American grasshopper, the chirp of which suggests the words "Katy did."

Kauai is the oldest of the Hawaiian islands. It was here that Captain Cook landed, 4, 296

Kaufmann, Angelica (1741 - 1807). Daughter of a Swiss portrait painter, she came to London and achieved fame as an artist, becoming a foundation member of the Royal Academy, 7, 82

Kaunas (Kovno) is the second largest town of the country of Lithuania, now incorporated in the U.S.S.R. It stands on the River Niemen.

Kauri. Name given to immense pine trees which grow in New Zealand, 1, 330; 3, 262, 27
Picture: 3, 267
Photo-tone Supplement: Wild Life in Australasia, 1, *between* 336 and 337

Kauri Gum. An amber-like gum found by digging among the dead forests of Kauri pine in New Zealand. It is used in the manufacture of linoleum, 1, 330; 9, 374

Kayaks are one-man boats, narrow and of considerable length, used by Eskimo hunters. They are propelled by paddles, 2, 364
Photo-tone Supplement: With the Eskimos of the Arctic, 2, *between* 368 and 369

Kaye-Smith, Sheila. Modern British novelist, she has written in particular stories of her native Sussex, 7, 263
Picture: 7, 266

Kazan is the name of a large town of the Soviet Union. It has a population of more than 400,000 and lies east of Moscow, about half way between that city and the Ural mountains. It was once a Tartar city and was captured by Ivan the Terrible in 1552, 4, 111

Kazakhstan is one of the republics of the Soviet Union. It is an important industrial region containing coal, tungsten, copper, and lead, as well as zinc, manganese, and iron ore. It also has good agricultural land and grows cotton, tobacco, and fruits. Stock-raising, especially sheep, is an important industry. The capital is Alma-Ata.
Picture: 4, 114

Kaziman. See *Kadhiman.*

Kazinga Channel. This is the narrow stretch of water joining Lake George with Lake Edward in East Africa.
Picture: 3, 373

K.C. is the abbreviation for King's Counsel. See *Queen's Counsel.*

CREATURES OF THE WILDS



Eric J. Hosking.

A small animal, about the size of a cat, the *Kinkajou* (see p. 205) is a member of the racoon family. Its fur is yellowish-brown, and it is found in South America.



F. W. Bond.

A native of New Caledonia, the *Kagu* (see p. 199) is about the same size as the domestic fowl. It has a large head and eyes, heron-like bill, and slaty-grey plumage.



F. W. Bond.

One of the many members of the Kangaroo family, the *Tree Kangaroo* (see p. 200) lives in New Guinea and feeds on fruits and ferns; a clumsy climber but a fine jumper.



Eric J. Hosking.

A member of the falcon family, the *Kestrel* (see p. 203) seen above has just captured a field-vole. Its habit of hovering motionless before swooping has given it the name of Windhover.

Kea. Member of the parrot family. Known in New Zealand to kill sheep and therefore a bird with a price on its head, **1**, 198
Picture: Fiercer Than They Look, **3**, 245

Kean, Edmund (1787–1833). A great English tragedian. He began his theatrical career at the age of two in a pantomime and made his fame in "Hamlet" and other parts before he was thirteen. Thereafter he had a long series of successes.

Keats, John (1795–1821). English poet, author of *Endymion, Hyperion, The Eve of St. Agnes,* and other poems, **2**, 411; **7**, 144. (*p.h.*)
Poems: The Naughty Boy, **9**, 92
The Dove, **9**, 98

Kebrabassa Rapids are on the Zambezi about 400 miles from the river's mouth. Between the Victoria Falls and the Rapids, the river runs through gorges and ravines.
Pictures: **3**, 298

Kedah is a State of the Federation of Malay. The chief products include rubber, rice, tin and wolfram. Alor Star is the capital.

Kedgeree. Name of an Indian dish usually containing fish and rice.

Keeler, James Edward (1857–1900). Famous American astronomer associated with the Lick Observatory. He showed that the rings of the planet Saturn are numbers of tiny satellites, **8**, 154

Keeling Islands. See *Cocos Islands.*

Keel-Plate. This is the first part of the framework of a ship to be laid down and forms the main backbone, **5**, 276
Picture: **5**, 276

Keighley is a woollen town of the West Riding of Yorkshire. It has also heavy industries.

Keijo is another name for Seoul, the chief city of Korea. See *Seoul.*

Keith. A small town of Banffshire, Scotland, the market centre of an agricultural district.

Kekchi Indians of South America are present-day representatives of the Mayas (*q.v.*).

Kelantan is one of the States of the Federation of Malaya It is famous for rice, rubber and copra. The capital is Kota Bharu.

Kellett. An Englishman of this name discovered Wrangel Island, off the north-east coast of Siberia in 1849.
Photo-tone Supplement In the Polar Regions, **2**, *between* 368 and 369

Kells is a town of Meath, Eire. Here a famous manuscript, illustrated, was prepared in the eighth century. It is known as the Book of Kells, and is regarded as the finest early Irish MS of the Gospels in existence. It is now in the library of Trinity College, Dublin.

Kelly Gang were probably the most notorious of all the bushrangers The leader, Ned Kelly, was a sort of Robin Hood. He wore armour which he made himself out of ploughshares, **3**, 205

Kelsey, Henry, was one of the pioneers of the Hudson Bay Company of Canada. He was an explorer as well as a trader and was only nineteen years old when he landed at the mouth of the Churchill River in 1689. He was one of the first white men to visit the Barren Lands, **3**, 158

Kelso. An industrial and commercial town of Roxburghshire, Scotland. It stands on the River Tweed.

Kelvin, William Thomson, Lord (1824–1907). A native of Belfast, he gave us the ocean cable; improved the mariner's compass and invented a deep-sea sounding machine. Altogether some sixty important inventions bear his name, **7**, 370, 409
Picture: **7**, 375

Kelvingrove Park is in Glasgow and a part of it includes the University buildings designed by Sir Gilbert Scott.
Picture: **3**, 115

Kemal Ataturk (1881–1938). First President of the Turkish Republic. He served in the Turkish army during the war of 1914–18 and is remembered for his defence of the Anafarta ridge during the Gallipoli campaign. He was the builder of modern Turkey, **2**, 236, **4**, 159
Pictures: **4**, 163 and 164

Kempenland. This is the name given to a region of Holland along the Dutch border. It is here that the few coalmines in Holland are found, **4**, 31

Kempis, Thomas A (1379–1471) He was author of the famous religious book *The Imitation of Christ,* which has been translated into every civilised language.

Kemp Land is the name of a little-known part of the Antarctic, East of Enderby Land. It was named after an explorer who landed here in 1833, **2**, 366

Kempton Park, 14 miles from Johannesburg, is the site of the Jan Smuts international airport which will be the largest of its kind in South Africa when completed, **3**, 288

Kemp-Welch, Lucy. One of the most famous British painters of animals, she has been called the Rosa Bonheur of British art.
Her "Colt Hunting in the New Forest" and many other of her pictures have been purchased for national collections

Kendal is a medium-sized town of Westmorland. It makes textiles as well as footwear, and stands on the River Kent, **3**, 90

Kenilworth. A small town of Warwickshire. It is famous for the ruins of Kenilworth Castle with its great keep known as Cæsar's Tower.
The place is associated in history with Robert Dudley, Earl of Leicester, who lavishly entertained Queen Elizabeth, **3**, 70
Photo-tone Supplement: Kenilworth Castle, **2**, *between* 128 and 129

Kenilworth Ivy. Another name for *Toad-Flax* (*q.v.*).

Kenmure, Lord, was one of the supporters of James the Pretender, and took part in the rebellion of 1715. With Lord Derwentwater he was executed in 1716 for his part in the rebellion, **2**, 180

Kennet and Avon Canal. An inland waterway connecting the Thames and Reading with Bath and Bristol.

Kennington, T. B. Well-known British artist, he belonged to the New English Art Club, **7**, 111
Picture: **7**, 110

Kennington is one of the inner suburbs of south-eastern London. It is noted chiefly for Kennington Oval, the ground of the Surrey Cricket Club.

Kenny, A. A., author of the poem, "The Cat and the Broom," **9**, 91

Kensington, in the West End of London, is known as the Royal Borough because it contains within its boundaries Kensington Palace, the birthplace of Queen Victoria.
It has also Kensington Gardens (adjoining Hyde Park), the Albert Memorial and the parish church of St. Mary Abbots.

Kensington Gardens. Large London open space. Near the Long Water (a part of the Serpentine) is to be seen the Peter Pan statue.
Picture: **3**, 24

Kent. One of the south-east counties of England, originally a kingdom of the Anglo-Saxons. Its area is 1,555 square miles; Maidstone is the county town; and the chief rivers are the Medway, Darent and Stour.
There are popular watering places along the coast, Dover and Folkestone being cross-channel ports. Canterbury, birthplace of Christianity in England, is in Kent, which is called the "Garden of England," **3**, 33 *et seq.*
Pictures: Dover Harbour, **3**, 4 and 5
Shakespeare's Cliff, **3**, 6
A Farm in "The Garden of England," **3**, 34
Kent Hops, **3**, 35
Reflected in the Still Moat Waters, **3**, 36
In Canterbury Cathedral, **3**, 37

Kent, Duchess of. As Princess Marina she married, in 1934, the Duke of Kent, who lost his life on active service in 1942. Her three children are Prince Edward, Princess Alexandra and Prince Michael.

Kent, Duke of (born 1935) Eldest son of the late Duke of Kent and the Duchess of Kent, Prince Edward came into the title on the death of his father in 1942.

Kentish Plover. See *Plover.*

Kentish Stour. A river of Kent which flows past Canterbury and enters the sea at Pegwell Bay, **3**, 33

Kentucky is one of the south-central States of the U.S.A. Its interests are mainly those of agriculture, including stock-raising, but it has valuable timber. Its horses are especially famous. Capital, Frankfort.
Picture: Portland Canal—Where the Tobacco Grows, **4**, 288
Pictorial Map: **4**, 291

Ken Wood. An estate of nearly 200 acres, with mansion, built by Robert Adam, at Hampstead, London. It became public property in 1927.

Kenya. A Colony and Protectorate of the British Commonwealth of Nations in East Africa. Nairobi is the capital. Of the population of 4,209,300 over four million are Africans. Agriculture and forestry is important, the main crops being coffee, grain, sisal, tea, and pyrethrum. There are also tropical crops and a dairy and cattle industry. Mineral wealth includes soda-ash, gold and silver. See *British East Africa,* **3**, 369 *et seq.*

—visited by H.M. King George VI when Duke of York, **2**, 244
Kenya, Mount. A volcanic peak in British East Africa. It is 17,040 ft. in height, **3**, 369
Kepler, Johann (1571-1630). Associated with Tycho Brahe, Kepler was an outstanding astronomer. He discovered certain laws relating to the motions of the planets, **7**, 349; **8**, 108
Kerch. A town and seaport of the Crimea, in the Soviet Union. It stands on the Kerch Strait, which links the Black Sea with the Sea of Azov.
Kermadec is the name of a group of Pacific islands belonging to New Zealand, **3**, 274
Kerman is a town of Persia noted for its beautifully-woven carpets, **4**, 204
Kermanshah. A town of western Iran (Persia) and an important oil centre. From here oil is piped to Haifa, Tripoli, and Abadan, **4**, 202
Kerosene is another name for paraffin oil or lamp oil. It is one of the products of distilled petroleum.
Kerry is a county on the west side of Eire in the Province of Munster. Within it are the famous Lakes of Killarney.
Tralee is the county town.
Kesteven is a district of Lincolnshire.
Kestrel. A small bird belonging to the falcon family. Noted for its amazingly swift flight.
Picture: **10**, 201
Special Colour Supplement British Wild Birds, **1**, *between* 160 and 161 (Plate 2)
Keswick is a town of Cumberland on Lake Derwentwater in the Lake District. It is a favourite place for visitors, and was the home of the poet Southey. Lead pencils are made here, **3**, 90
Ketch. A two-masted small sailing vessel, the mizzen mast forward of the tiller
Kettering. A large manufacturing town and commercial centre of Northamptonshire. It is famous for footwear.
Kettledrums have a head or striking surface at one end only. They are used in the mounted bands of cavalry regiments and in orchestras. In the latter case they are known as timpani. See *Drum*.
Kettle Holders, to protect the hand from the heat of the kettle handle, are easily made by weaving wool on canvas, **8**, 377
Kettwig. A town of the Ruhr in Germany not far from Dusseldorf. Krupps factories there, once used for gun experimental work, now produce cloth.
Picture: **4**, 83
Kew Gardens, also known as the Royal Botanic Gardens, Kew, originated in the Botanic Gardens, covering 9 acres, founded in 1759 by the mother of George III.
In 1840 Queen Victoria gave the old Gardens and a large area joined to them to the nation. At present they occupy 288 acres. They are to be found at the side of the Thames near Richmond, Surrey, **9**, 373
Key. An implement for shooting or withdrawing the bolt of a lock. The word is also used in music for a system of notes, related to each other and based on a particular note. It also means the explanation or solution of problems, etc. The word has other allied meanings in engineering and architecture *(p h.)*
Keyes, Lord (1872-1945). British Admiral. He organised the brilliant attack on Zeebrugge, April 23rd, 1918, when Vice-Admiral Sir Roger Keyes.
His son, Lt.-Col. Geoffrey Keyes, was killed in N. Africa in 1941 during a daring commando raid. He was awarded the V.C. posthumously.
Key of France. Name given in the time of Edward III to the French port of Calais, **2**, 125
Keys, House of. See *House of Keys*
Keystone of Canada is a term applied to Winnipeg, Manitoba, because of its land position and communications, **3**, 179
Key West. A town and seaport of Florida, U.S.A. It is a well-known holiday centre and an extensive depot of the U.S. Navy, **5**, 136
kg. means a kilogram, a measure of weight
K.G. means Knight of the (Most Noble Order of the) Garter.
Khabarovsk is the chief city of eastern Siberia. It has a population of over 199,000. Here the mining of ore containing uranium is being developed, **4**, 118
Khakhus is the name of a race of people living in the Kachin Hills of Burma. They are included with the *Kachins (q.v.)*
Khaki is a Hindustani word meaning dust-coloured. It was first adopted as the colour for British Army field uniforms in the South African War (1899-1902) and has been used ever since, **9**, 374
Khama. The name of a famous king of the Bamangwato tribe of the Bantu people in the Bechuanaland Protectorate, **3**, 294
His followers gave a panel to the Livingstone Memorial
Picture **2**, 338
Kharkov is a region (province) of the Ukraine, in the Soviet Union. The name is also given to its capital, an important commercial and industrial centre, **4**, 112
captured by the Germans, **2**, 252
Khartoum is the capital of the Anglo-Egyptian Sudan and stands where the Blue and White Niles meet. General Gordon made Khartoum his headquarters and Lord Kitchener won back the town at the Battle of Omdurman (1898), **2**, 236, 241; **4**, 197
Khasi Hills are in Assam. From here comes kyanite, used in sparking plugs, cement, and other things, **4**, 372
Khayyam, Omar. See *Omar Khayyam.*
Kherson. A large tract of country in the Ukraine, Soviet Union. The name is also given to its capital, a town and port on the River Dnieper.
Kheyr-ed-din was a pirate of north Africa, a Barbary corsair. He was at the height of his power from 1518 until 1546 and was the greatest of the Barbary pirates. The Sultan made him Supreme Admiral of the Ottoman fleet, **4**, 166
Khingan Mountains. They are to be found between Manchuria and Mongolia and are formed of the Great Khingans and the Little Khingans
Khiva is one of the chief towns of the Usbek Republic of the Soviet Union, **4**, 112
Khmer. The name of a people who lived in Indo-China long ago. Little is known about them, but their high culture and civilisation is shown by the ruins of their great city, Angkor Thom, and the moated temple of Angkor Vat. No one has been able to explain why the Khmers deserted their capital, **4**, 212
Pictures **4**, 213
Khyber is the name of the great pass thirty-three miles in length between India and Afghanistan, **3**, 337; **3**, 340
Pictures: The Indian Frontier, **3**, 338
Kiang. The wild donkey of Tibet, **1**, 94
Picture **1**, 93
Kiangsi is a vast province of Central China. Its capital and chief city is Nanchang.
Kiangsu. A province of China, it has a coastline facing the Yellow Sea. The capital is Chinkiang
Kiayu Pass is on the threshold of the Tibetan mountains and is one of the terminal points of the Great Wall of China, **4**, 229
Kid is the name given to the young of the goat
Picture: Brought up on the Bottle, **8**, 313
Kidd, Captain William (*c.* 1650-1701). A Scottish pirate around whose exploits many legends grew, chiefly concerning the treasure he was supposed to have hidden, **8**, 54
Kidderminster. A large town of Worcestershire most famous as a centre for making carpets. It stands on the River Stour.
Kidneys, of which we have two, are living filters. They are packed with thousands of tiny coiled tubes, **8**, 226
Picture **8**, 226
Kidney Vetch. See *Lady's Fingers.*
Kiel. A great German seaport after which the Kiel Canal is named. It stands on the Baltic and is an important naval depot, **2**, 238
Kiel Canal is a famous waterway of Germany joining the Baltic and North Seas. It is nearly sixty-one miles in length, **2**, 233; **4**, 46, **5**, 53
Picture: **4**, 71; **5**, 53
Kielce Plateau. This is the name given to an important manufacturing region of Poland where there are coalfields, and iron, copper, and lead mines. The plateau is crossed by the River Vistula, **4**, 126
Kiev. A very large and historic town of the Ukraine, in the Soviet Union. It is the capital of this republic of the U.S.S.R. and has machine-tool engineering works, film studios, many other industries and educational establishments, **4**, 112
—captured by the Germans, **2**, 252

Kiewa, in the state of Victoria, Australia, is the scene of one of the most recent hydro-electric development schemes of the Commonwealth. Although there is now a hydro-electric station at Kiewa, the Kiewa project (as it is called) will not be complete for some years yet, **3**, 213

Kigezi. A district of the Western Province of the Uganda Protectorate, **3**, 375

Kigoma is a port on Lake Tanganyika, near the town of Ujiji, **3**, 370

Kil. means kilometre. This is a measure of distance used on the Continent of Europe. One kilometre is about five furlongs in British measure.

Kilauea is the name of a volcanic crater to be found on one of the Hawaiian islands. It forms a lake of lava.
Picture: **1**, 44

Kilbirnie is a town of Ayrshire, Scotland, interested in the manufacture of linen. It stands on the River Garnock.

Kildare. A county of the Province of Leinster in Eire. It is interested almost entirely in agriculture.
The county town, a place of great antiquity, has the same name.

Kilgraston is a country seat of Perthshire, Scotland, near the village of Bridge of Earn.
Picture: **3**, 131

Kilimanjaro is an extinct volcanic peak of Tanganyika Territory, British East Africa. It is 19,321 ft. in height, **3**, 369
Picture: **3**, 372

Kilindini. It means "the deep place" and is one of the harbours of Mombasa, the chief port of Kenya Colony and Protectorate in British East Africa.
Picture: **3**, 369

Kilkee. A tourist and holiday resort of Eire. It is situated on the coast of County Clare.

Kilkenny is one of the counties of Eire, in the Province of Leinster. Within it is a coal-field, but it is mainly an agricultural district.
Kilkenny is the county town, on the River Nore.

Killarney is a town of County Kerry, Eire.

Killarney, Lakes of. Beauty spot of County Kerry, Eire, unequalled for scenery. They consist of the Lower Lake (Lough Leane); the Middle (or Muckross) Lake; and the Upper Lake, **3**, 144
Picture: **3**, 151

Killas is the name given in Cornwall to veins of tin ore, **6**, 129

Killer Whale. Name of a whale found in the Pacific. See *Whale.*

Killiecrankie, Pass of. See *Pass of Killiecrankie.*

Killigrew. A popular variety of the bulbous plant narcissus in the Star class.
Picture: **8**, 279

Killing Bottle. An appliance used by collectors of butterflies and moths, **8**, 282
Picture: **8**, 284

Kilmarnock is a town of Ayrshire, Scotland. It is interested mainly in iron and the heavy industries, **3**, 122

Kiln. A chamber in which things or materials are heated or dried. Kilns built of firebrick, or some other heat-resisting substance, are used for burning lime and hardening bricks and pottery.
Other forms of kilns are used for drying corn, hops and wood.
Picture: How Pottery is Baked in a Kiln, **9**, 200

kilo. means a kilogramme, a measure of weight.

Kilowatt. The unit of consumption of electrical energy. Energy consumed at this rate for an hour is a kilowatt-hour, the unit (called Board of Trade Unit, or B.T.U. for short) to which household electricity meters are graduated.

Kilwinning. A busy industrial town of Ayrshire, Scotland. It stands on the River Garnock.

Kim is the title of a tale by Rudyard Kipling. The hero is an orphan who becomes the companion of a Lama from Tibet, **3**, 338

Kimberley. (1) A small industrial town of Nottinghamshire. (2) A town of the Cape Province, South Africa, a great centre of diamond-mining, **3**, 293; **4**, 383
Picture: **3**, 282

Kimberley. A town of south-east British Columbia and an important mining centre. It stands in the Rocky Mountains about sixty miles west of Crowsnest Pass, **3**, 196

Kimono is a garment worn by women in Japan. It is made from silk or cotton, **4**, 248
Picture: **4**, 260

Kincardineshire. A county of the eastern side of Scotland. Much of it is mountainous or moorland.
The capital is Stonehaven.

Kinchenjunga. See *Kanchenjanga.*

Kindergarten, a German word meaning literally "children's garden." It stands for a system of teaching very young children, introduced by Friedrich Froebel in 1837. See *Froebel.*

Kinder Scout is a peak of the Pennines in Derbyshire, 2,088 ft. high.

Kine. A word sometimes used to describe cows.

King, William Lyon Mackenzie (1874–1950). Canadian statesman, he was Prime Minister of Canada 1921–30, with a short break in 1926, and from 1935 till his retirement in 1949, when he was succeeded by Mr. L. S. St. Laurent.

King Alfred. One of the biggest and best kinds of daffodil.
Picture: **8**, 279

King Arthur was probably a chief in Saxon times, though the stories of his court and Knights of the Round Table are most likely legendary. Tennyson's "Idylls of the King" are based on the legends of Arthur's times, **9**, 323
—the Scilly Islands said to be his Kingdom, **3**, 46
—Glastonbury his burial place, **3**, 58
See also *Tales of King Arthur and the Round Table*, **5**, 383
Colour Plate: The Sword Excalibur, **5**, *facing* 384

King Charles Spaniel. A breed of small dog so named because it was popular in the reign of Charles I. It has a thick coat and long ears.
Picture: **10**, 111

King Class. The "King Class" of modern railway engines are used on the "Cornish Riviera" and other expresses.
Special Colour Supplement: Railway Engines, **5**, *between* 128 and 129 (Plate 2)

King Crab. A marine creature quite different from the true crab and very like the extinct trilobite.

Kingcup. Name sometimes given to the plant marsh marigold (*q.v.*).

King Edward VII Land was the name given by Captain Scott to part of Antarctica on the eastern side of the Ross Sea, **2**, 370

King Edward VII Plateau is a tract of ground 9,000 ft. above sea level in the Antarctic, **2**, 374
Pictorial Map **2**, 367

Kingfisher. The most brilliantly coloured of all British birds. It is about 7 in. in length and nests in a tunnel in the bank of a stream, **1**, 164. (*p.h.*)
—about its eggs, **1**, 170; **1**, 171
Picture: **1**, 202
Special Colour Supplement: British Wild Birds, **1**, *between* 160 and 161 (Plate 1)

King's Bay is an inlet in Spitsbergen from which Byrd and Bennett set out to fly over the North Pole **2**, 361

King's Champion, or Champion of England, is an hereditary office, said to have been held first by the Marmions. The Champion appeared at the King's coronation and challenged to single combat any person who disputed the sovereign's right to the Crown
The first recorded performance was at the coronation of Richard II in 1377, and the last at George IV's coronation in 1821 The present holders of the office are the Dymoke family of Scrivelsby Court, Lincs. The right and title as well as that of Standard-bearer of England were claimed at the last four coronations by a member of this family.
Colour Plate. The Challenge of the King's Champion, **2**, *facing* 108

King's College Chapel, at Cambridge, is regarded as one of the architectural wonders of the world. **3**, 69
Picture: **3**, 67

King's County, Eire. See *Offaly.*

King's Dirk. An award given to the best all-round cadet of the year at the Royal Naval College, Dartmouth. This prize was won by H.R.H. the Duke of Edinburgh while he was at the College, **2**, 266

Kingsford-Smith, Sir Charles (1897–1935). A pioneer of long-distance flight by air, he was the first airman to circumnavigate the world, **5**, 205
Picture: The Southern Cross, **5**, 205

Kingsley, Charles (1819–75). Rector of Eversley, Hampshire; also professor of modern history at Cambridge and canon of Westminster. He was a novelist, poet and social reformer. His most popular novel was *Westward Ho!*, while both *The Water Babies* and *The Heroes* have long been regarded as children's classics, **2**, 411; **7**, 216, 271. (*p.h.*).

—tutor to King George V, 2, 229
—described the Fens in *Hereward the Wake*, 3, 66
Poem: Earl Haldan's Daughter, 9, 110
Picture: Amyas Leigh of *Westward Ho!*, 7, 217
Colour Plate: An Incident from *Westward Ho!*, 7, *facing* 260

King's Lynn. A town and port of Norfolk, on the River Great Ouse. It is famous for its ancient buildings and is a market centre for a large agricultural district, 3, 65

King Solomon's Mines. Famous adventure romance written by Sir H. Rider Haggard (*q.v.*) in 1885, 7, 241
Pictures: The Congo Caves, Cape Province, 3, 291
From *King Solomon's Mines*, 7, 242

King's Park is at Perth, the capital of Western Australia. It extends for a thousand acres, 3, 219
Picture: 3, 219

King's Pipe is the name given to a furnace in a small building at the London Docks. In this furnace condemned tobacco is destroyed, 8, 96

King's Prize. The blue ribbon of British rifle-shooting. See *Queen's Prize.*

King's Sedge Moor is in the West Country, not far from Bridgwater. It is a centre of the ancient village craft of basket-making.
Picture. 3, 54

Kingston. (1) The capital of the British colony of Jamaica in the West Indies. It has a population of over 100,000 and a fine natural harbour, 3, 396, 398
—it was visited by H.M. King George VI when Duke of York (1927), 2, 244
(2) Kingston is also the name of a city in Ontario, Canada. It stands on Lake Ontario.

Kingston-on-Thames. A riverside town of Surrey, virtually a residential suburb of London.
Here may be seen the coronation stone of some of our early Anglo-Saxon kings, from which the place takes its name.
Picture: New Power Station, 6, 300

Kingston-upon-Hull is the official name of the great Yorkshire port of *Hull* (*q.v.*).

Kingston, William Henry (1814–80). Well-known English writer whose stories for boys were very popular and are still read. Author of *Peter the Whaler.*

Kingstown, County Dublin, Eire, is a centre for sea fisheries and the port used by mail steamers to and from Holyhead and Liverpool. It is the port for Dublin, capital of the Republic of Ireland, 3, 150

Kingussie is a noted Scottish resort on the River Spey in Inverness-shire, 3, 124

King William's Land is an island off the North-West Territories coast of Canada, 2, 303

King William's Town. An important town of the Cape Province, in the Union of South Africa, standing on the River Buffalo. It is a marketing centre of a large district.

King with the Golden Touch, The. A tale from the myths and legends of the Greeks, 5, 345

Kinkajou. Small South American animal allied to the racoons. The size of a cat, it swings from tree branches by its tail.
Picture: 10, 201

Kinkukuji Gardens are to be found at Kyoto, in Japan. They contain a tree, centuries old, trained in the shape of a boat.
Picture. 4, 257

Kinlochleven is a town at the head of Loch Leven. Here water power is used for aluminium works, 3, 128, 138
Colour Plate: How Scotland's Water Drives an Aluminium Works, 6, *facing* 128

Kinross, standing on Loch Leven, is the county town of Kinross-shire, Scotland.

Kinross-shire. A county of Scotland, one of the smallest, to be found between Fifeshire and Perthshire. It is associated with Loch Leven and Leven Castle.

Kinsale. A town and port of County Cork, Eire, it is a noted holiday and touring centre. There is a well-known lighthouse on Kinsale Harbour.

Kinta Valley is in the Federation of Malaya, east of the Kledang mountains, and contains Malaya's richest tin mines, 3, 403

Kintyre, Mull of. A peninsula of Argyllshire, Scotland. At the upper end runs the Crinan Canal.
Its principal centre is Campbeltown.

Kiolen Mountains are a lofty range forming a natural frontier between Norway and Sweden. The highest peak is Skagstolstind, over 8,000 ft. high, 4, 36 *et seq.*

Kiosk. (1) A small hut placed in a street for the sale of newspapers, tobacco, etc. (2) A similar structure used as a telephone booth. (3) A building about 8 ft. in height and a yard in diameter used for "stepping-down" electrical current in a transformer, 6, 298

Kipling, Rudyard (1865–1936). He went to India when seventeen and was famous for his writings when he returned to England. As a poet he holds a great place.
His works include *Plain Tales from the Hills: Stalky & Co.: The Jungle Book: Kim,* etc., etc., 7, 246; 7, 271, 272, 273
Poem: Big Steamers, 9, 86
Pictures: The Lama, 7, 248
Mowgli leaving the Jungle, 7, 249
Colour Plate: The Meeting at the Council Rock, 7, *facing* 261

Kipper is the name given to a herring that has been cured by smoking, 8, 78

Kirchhoff, Gustav Robert (1824–87). A German scientist, he (jointly with Bunsen) discovered and perfected the spectroscope.

Kirghiz is the name of a Republic of the Soviet Union situated in Central Asia. Sheep and goats are raised, the interests of the country being mainly agricultural. The people are called Kirghiz, 4, 112; 4, 238

Kirk, Sir John (1832–1922). British administrator and naturalist. As a medical man he served in the Crimean war, then went out as physician with Livingstone's second expedition in 1858, and was one of the first four white men to see Lake Nyasa. Later, he became Consul at Zanzibar and secured the extinction of the slave trade. His botanical collections proved of great value.

Kirkcaldy stands on the Firth of Forth and is a town of Fifeshire, Scotland. It is famous for its linoleum and oilcloth industries, 3, 122

Kirkcudbright is the county town of Kirkcudbrightshire, in Scotland. It stands on the River Dee and has a fine harbour on Solway Firth.

Kirkcudbrightshire. A county of Scotland in the south-west of that country. It is part of the district known as Galloway and has a coast-line on Solway Firth.
Inland, it is hilly with Mount Merrick as one of its chief peaks. It includes the Dee, Cree and Urr among its rivers.

Kirkland is a gold mining centre in the province of Ontario, Canada, 3, 196

Kirkuk is a town of Iraq and lies east of the upper reaches of the River Tigris. It is an important oil centre and is linked by pipe line to the Holy Land ports of Haifa and Tripoli, 4, 186

Kirkwall is a port and the principal town of the Orkney Islands, 3, 140

Kirriemuir is a town of Angus, Scotland. It was "Thrums" in the writings of Sir J. M. Barrie, who was born here.

Kiruna is a town of Northern Sweden, in the centre of an iron-ore district, 4, 38

Kisumu is a town and a port of Kenya Colony, on the shores of Lake Victoria, 3, 370; 9, 314

Kitchener, Horatio Herbert, Viscount Kitchener of Khartoum and Aspall (1850–1916). Saw service in the Sudan and became Sirdar of the Egyptian Army. In 1898 crushed the Dervish power at Omdurman and was Commander-in-Chief in the South African War.
In the war of 1914–18 his immense reputation brought about the enlistment of millions of men and the organisation of Britain as a fighting nation. Lord Kitchener was drowned in the sinking of the battleship *Hampshire*, 2, 225, 235, 236
Picture: 2, 236

Kite. A bird of the hawk family. It is about 26 in. in length and was at one time common in Britain, but is now rather rare.

Kite. This is an appliance which ascends into the air by reason of the pressure of the wind upon an inclined surface. Kites are said to have been invented by the Chinese and were flown on festive occasions. In more recent years experiments have been made with man-lifting kites, including those made by the pioneer airman Colonel Cody. The box kite has frequently been used in scientific work, 9, 380
—Kites and how to make them, 8, 362
Picture: The Importance of Shape, 9, 381

Kit's Coty House near Aylesford, Kent, is an old landmark near the Pilgrim's Way over the North Downs. It is one of the few cromlechs or dolmens, in England—the prehistoric burial chambers, in which two or more upright stone blocks were capped by a large flat stone as a roof. See *Cromlech.*

Kitten is the name given to the young of a cat.
—how to feed and bring up a kitten, **8**, 314

Kittiwake. The smallest gull of all. It gets its name from the cry "kittiake," **1**, 202

Kiushiu is one of the main islands of Japan. It contains the port of Nagasaki, **4**, 250

Kiwi. A curious New Zealand bird with wings that can scarcely be seen. It is most active at night, but cannot fly, **3**, 261. (*p.h.*)
Photo-tone Supplement: Wild Life in Australasia, **1**, *between* 336 and 337

Kizimbani. The name of an Experimental Station in Zanzibar, British East Africa. Here the clove tree is scientifically studied.
Pictures. **3**, 376

Klaipeda is the chief port of Latvia. Before this Baltic state returned to Russia, Klaipeda was known as Memel, **4**, 52

Kledang Mountains are a range of heights in Malaya, **3**, 403

Klerksdorp. A town and marketing centre of the Transvaal, Union of South Africa.

Klipspringer. Name of one of the smaller antelope groups found in Africa. Only the males have horns.

Klondike is the name of a river and district in the Yukon, north-west Canada. Rich finds of gold were made here in 1896, and the gold rush of 1897 followed. Within a very few years most of the gold had been removed. The building of a railway to this area covering some 100 miles from Skaguay to the coast made access more easy. In more recent times silver ore has been found in the district, **3**, 164, 166; **5**, 134
Pictures: Gold Mining in the Klondike, **3**, 166; **6**, 86
The Trail of '98, **6**, 87

Klong is the Siamese name for a canal. There are many *klongs* in Bangkok, the Siamese capital, **4**, 210
Picture: **4**, 208

Knapweed. A familiar wild flower, very similar to but smaller than the hardheads. The small flowerheads are dull purple and have some resemblance to the thistle and are often found growing in the company of thistles. (*p.h.*)

Knaresborough is a commercial and manufacturing town of the West Riding of Yorkshire. It was the birthplace of John Metcalf, the blind road-maker and is famous for its petrifying well.

Knickerbocker was the name given to early Dutch settlers in New York and their descendants and to the knee-breeches worn by them in the seventeenth century.

Knight, Dame Laura. She is a notable modern British artist, famous for her many pictures of circus folk. She became an R.A. in 1936. Her husband, Harold Knight, a portrait painter, was elected an R.A. in 1937, **7**, 118
Colour Plate: The Mills Circus, **7**, *facing* 117

Knights Bachelor are notable people upon whom the honour of knighthood is conferred, though they do not belong to any of our nine Orders of Chivalry.

Knights Hospitaller, or Knights of St. John of Jerusalem, was the name of an order of knighthood which came into being about the middle of the eleventh century, **2**, 102
—the Knights at Malta, **3**, 387
—the Knights at Rhodes, **4**, 158
Pictures. St. Johns Co-Cathedral, Valletta, **3**, 389
Where the Knights of St. John once ruled, **4**, 158
Lindos, where St. Paul landed, **4**, 161

Knights of St. John. This was another name for the Knights Hospitaller (*q.v.*).

Knights of the Bath. Members of the British Order of the Bath, founded 1399.
Picture: **3**, 16

Knights Templar. This Order of knighthood founded about 1119 was originally concerned with protecting pilgrims from robbers, **2**, 102

Knitting is one of the most fascinating forms of needlework by which wool is fashioned into useful forms, **8**, 395
Pictures: Casting on; the garter stitch, **8**, 397
Stocking stitch, **8**, 398
Ribbing and casting off, **8**, 399

Knitting Frame. This is useful for making cord, tassels, etc. In a simple form it may be carried out on an empty cotton reel, but a frame is required for more advanced work, **8**, 380
Pictures: How to Knit ón a Frame, **8**, 381
Making Cord, **8**, 382

Knobkerry. A wooden club having a heavy, rounded head. It is used as a weapon by the Zulus.
Photo-tone Supplement: Union of South Africa, **3**, *between* 304 and 305

Knocke-Zoute is a holiday centre along the Belgian coast from Ostend, **4**, 26

Knole. The name of a stately mansion near Sevenoaks, Kent. It has been handed over to the National Trust by the Sackville family, **3**, 413; **7**, 320
Pictures: **7**, 320, 321

Knot. An intertwining of rope or string to fasten ends together or to secure other objects. A knowledge of the different kinds of knots is important aboard ship, and is taught in other branches of the Defence Forces and in the Fire Service. Knotting is also an important part in the training of Scouts.
Pictures: **8**, 251; **10**, 207

Knot is a measure of speed at sea, a knot being the equal of about 1 1/7 statute miles per hour, **5**, 254

Knot, Gordian. See *Gordian Knot.*

Knox, John (1513-72). A great Scottish reformer who took part in the revision of the Prayer Book, **2**, 152
Picture: Reproved by John Knox, **2**, 151
Where Calvin and John Knox preached, **4**, 55

Knut. See *Canute.*

Knutsford. A residential town of Cheshire. It was made famous under the name *Cranford* by the author Mrs. Gaskell.

Koala. One of the pouched animals of Australia. Bear-like in appearance, it has no tail. Its time is spent mostly in trees, for the creature feeds on young shoots, **3**, 245. (*p.h.*)
Photo-tone Supplement Wild Life in Australasia, **1**, *between* 336 and 337

Kobe is a seaport and town on the Island of Honshiu, in Japan, **4**, 258

Kobh (pronounced *Cove*) in Cork Harbour, Eire, was formerly known as Queenstown. It is one of the chief ports of the Republic, **3**, 152

Kobollzeller is the name of one of the towers and gateways of the old walled tower of Rothenburg in Bavaria, Germany.
Picture. **4**, 78

Koch, Robert (1843-1910). A German bacteriologist. Discovered how to inoculate against anthrax and found the bacillus of consumption. He also investigated plague, malaria and other diseases, **7**, 388

K. of K. was a popular name for Earl Kitchener of Khartoum, **2**, 236

Koh-i-Noor. A great diamond presented to Queen Victoria by the East Indian Company. It is now part of our royal regalia. The word means "mountain of light."

Koln is the German name for *Cologne* (*q.v.*).

Kolkhoz is the Russian name for a Collective Farm (*q.v.*).

Komondor is the name given to the sheep dog of the Hortobagy Plain in Hungary.
Picture: **3**, 3

Komsomolsk is an important town in eastern Siberia where the mining of ore containing uranium is being developed, **4**, 118

Kongwa. A new town which has arisen in Tanganyika Territory in connection with the East African Groundnuts Scheme. See *British East Africa.*

Königsberg was formerly the capital of East Prussia but was re-named Kaliningrad in 1946.

Königswinter is a German town on the banks of the River Rhine.
Picture: **4**, 66

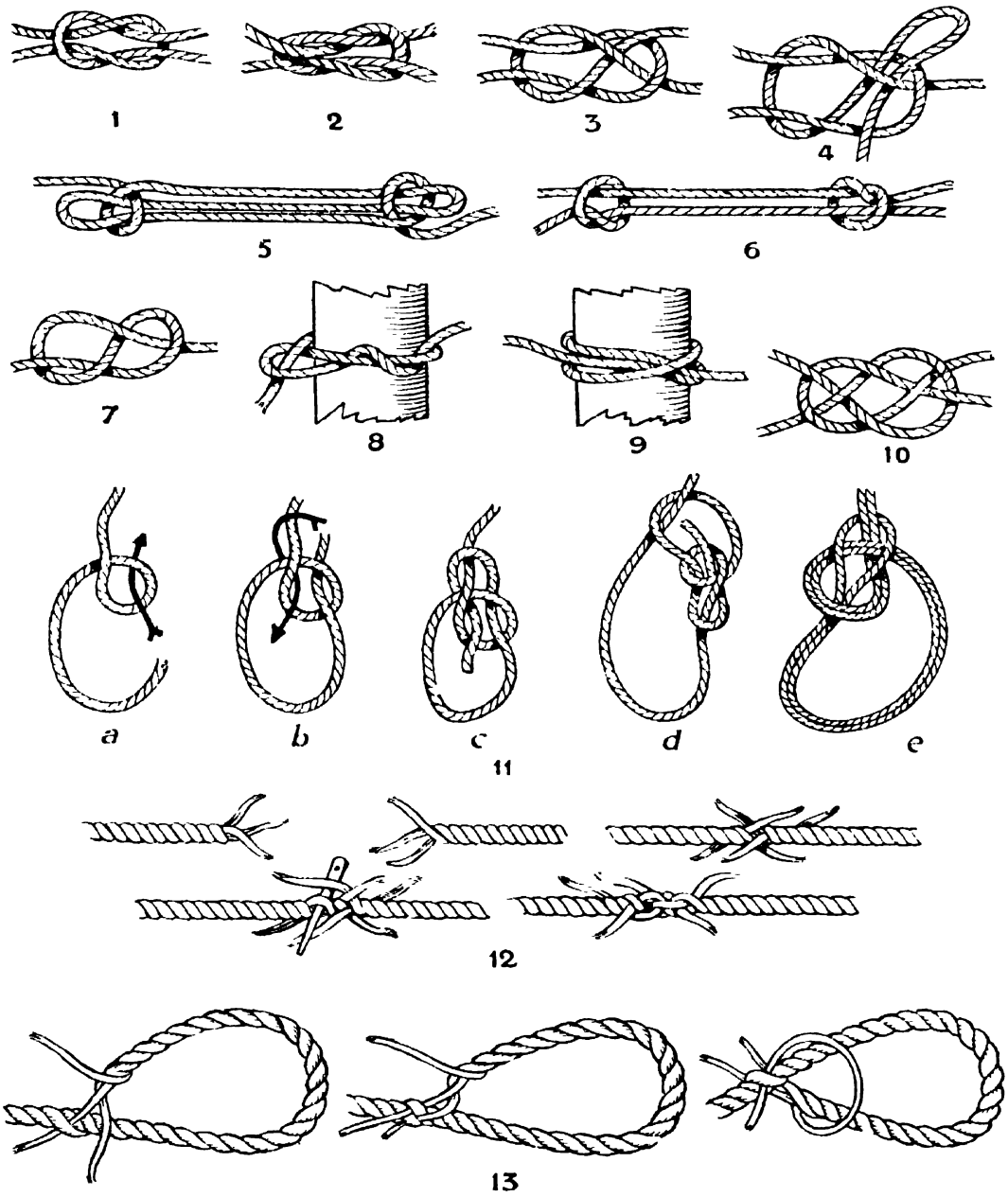
Koodoo. One of the African antelopes. It has long spiral horns.

Kookaburra is a bird of Australia. From the strangely derisive call it sometimes makes it is also known as the Laughing Jackass, **3**, 246
Photo-tone Supplement: Wild Life in Australasia, **1**, *between* 336 and 337

Koolan is the name of an island in Yampi Sound in the Buccaneer Archipelago off the north-west coast of Western Australia. It has vast iron ore deposits, **3**, 238
Picture: **3**, 239

Kootenay. A lengthy river of Canada, it rises in the Rocky Mountains of British Columbia and joins with the Columbia River.
The name is also given to a lake in British Columbia; to a Pass in the

SOME USEFUL KNOTS



Specially drawn for this work.

1. Reef Knot—most generally used knot. 2. The Granny, which should be avoided. 3. The Bend, Sheet Bend or Weaver's Knot—for joining small cord or thread. 4. Slipper Bend—same as 3 but loose end in form of loop, can be easily cast off. 5. Sheepshank—for shortening a rope. 6. Englishman's or Fisherman's Knot—a simple way of joining two thick ropes together. 7. Figure-of-Eight Knot—tied at end of rope to prevent running through block. 8. Timber Hitch—simple friction knot. 9. Clove Hitch—to hold on smooth surface. 10. Carrick Bend—for uniting two ropes of different thickness. 11. Bowline—a, b and c show how it is made; d, a running bowline; e, bowline on a bight. 12. Short Splice—four stages. 13. Eye Splice (three stages).

Rocky Mountains and to a district of British Columbia.

Kopje is the Boer name for an isolated peak on the South African veld, 3, 293

Koran is the name of the sacred book of Mohammedans. It was written in the year 610, or thereabouts, 2, 404

Korea is a mountainous peninsula of eastern Asia, dividing the Yellow Sea from the Sea of Japan. It was annexed by Japan in 1910, but since 1945 has enjoyed independence—a Russian-sponsored "People's Republic" functioning in the north and the Republic of Korea ruling in the south. Pyong-Yang is the northern capital and Seoul the southern capital. Korea is chiefly an agricultural country. The combined population of north and south is about 24½ millions, 4, 250, 376
—Outbreak of War in Korea, 1950, 2, 264, 416
Picture: Presenting Battle Honours in Korea, 2, 265

Korea Strait is the stretch of water dividing Korea from the Tsushima Islands which are a part of Japan, 4, 250

K.O.S.B. means King's Own Scottish Borderers.

Kosciusko is the name of the highest mountain in Australia. It stands in the New South Wales portion of the Australian Alps and is 7,328 ft. high, 3, 234
Photo-tone Supplement: Australia, 3, *between* 240 and 241
Pictorial Map: 3, 243

Kosciuszko, Tadeusz (1746–1817). A Polish soldier who led the revolutionary forces against Russia in 1794. He was finally defeated by combined Russian and Prussian forces, 4, 123

Kossuth, Louis (1802–94) A national hero of Hungary. He was leader in Hungary's bid for independence from Austria.

Kotor. The name of a gulf on the Adriatic coast of Yugoslavia and of the port at the head of that gulf. Kotor has old walls and a remarkable road up the steep heights behind the town, 4, 156

Kotri. A town in the Sind province of Pakistan near the River Indus. On the river, north of the town, a barrage similar to that at Sukkur (*q.v.*) is being constructed.

Kowloon. A small peninsula of the southern Chinese mainland opposite the island of Hong Kong and now forming part of that British colony, 3, 388

K.O.Y.L.I. means King's Own Yorkshire Light Infantry.

K.P. means Knight of the (Most Illustrious Order of) St. Patrick.

Kraal is a word of Dutch origin, which may mean one hut or a village of the Natives of South Africa.
Pictures: 3, 275, 279, 306
Photo-tone Supplement: With the Zulus of Today, 3, *between* 304 and 305

Krakatoa. Name of a volcanic island in the East Indies. Scene of a violent eruption in 1883, 1, 369

Krak des Chevaliers is the name of a famous Crusader castle in the Syrian desert, 4, 190
Picture: 4, 186

Kreisler, Fritz (born 1875). He is considered by many experts to be the greatest of living violinists. A violin concerto was dedicated to him by Elgar.

Kremenchug, standing on the River Dnieper, is a town and river port of the Ukraine, in the Soviet Union.

Kremlin is the name of a famous group of ancient buildings in Moscow. It is a fortress. It has within its walls many palaces and churches, and now contains most of the offices of the Soviet Government, 4, 116
Picture: 4, 107

Krishna. A Hindu deity, regarded as an incarnation of Vishnu, one of the three chief gods of Hinduism, 3, 332

Kristiansand is a timber port of southern Norway facing the Skaggerak.
Picture: 3, 64

Krivoi Rog. A town of the Ukraine, in the Soviet Union. It is a centre for coal, iron and heavy industries.

Kronborg Castle at Elsinore in Denmark is famous as the place where Hamlet is said to have seen his father's ghost, 4, 47
Picture: 4, 45

Kronstadt is a great port and naval base on the Gulf of Finland. It belongs to the Soviet Union.

Kru. The Kru people live in the coastlands of West Africa. Kru men are sturdily built and are famous sailors and expert boatmen, 3, 380

Kruger National Park is a famous wild animal reserve in the eastern Transvaal, 8,000 square miles in extent, 3, 292
Photo-tone Supplement: Land of the Ostrich and Zebra, 3, *between* 304 and 305

Kruger, Stephen John Paul (1825–1904). President of the Transvaal Republic. His refusal to put right the grievances of English and other white residents led to war with Britain in 1899. He died in Switzerland, 2, 220
See also *Boer* War.

Krugersdorp. An industrial town and the chief centre of the West Rand in the Transvaal. It contains large gold mines, 3, 289

Krupps. The name of a great German armament firm whose heavy industry lay in the Ruhr. Some of their munitions factories have been dismantled; others have been put to turning out things needed for peace, 4, 80 *et seq.*
Pictures: 4, 83

Kshattruyas form a caste of Hindus. They are descended from soldier ancestors, 3, 319

K.T. means Knight of the (Most Ancient and Most Noble Order of the) Thistle.

Kuala Lumpur is capital of Selangor, a state in the Federation of Malaya and of the Federation itself. It is known as "the rubber city of Malaya," 3, 402

Kuan Yin is the Chinese Goddess of Mercy.
Picture: 4, 226

Kubbet-es-Sakhra. See *Dome of the Rock.*

Kubla Khan (1216–94) was Emperor of China with his capital where Peking now stands. With him was associated the famous explorer Marco Polo, 2, 268
Picture: 2, 270

Kuching. Capital of the British colony of Sarawak in north Borneo. It stands on the banks of the Sarawak river some twenty miles from the sea 2, 325 *et seq.*; 3, 404
Pictures: 2, 325, 403, 404

Kumasi, about 170 miles from the coast, is capital of Ashanti, a British Protectorate governed from the Gold Coast, 3, 381

Kumo Elf is a river of Finland used for the floating of timber to the mills, 4, 48

Kunming is a town of south-western China, best known as the link point on the Burma road from Lashio in Burma to Chungking, 4, 216.

Kuomintang means People's Party and is the name of the party of the Nationalist Government in China. The Party was originally the revolutionary movement founded by Dr. Sun Yat-sen, 4, 231

Kura is a river of the republic of Georgia, in the Soviet Union. Tbilisi (Tiflis), the capital, stands on this river.

Kurdistan. The land of a race of people known as the Kurds. It is in Asia Minor and extends into Persia. The district is very hilly.

Kurile Islands are found between the peninsula of Kamchatka, U.S.S.R. and Japan. They formed part of the Japanese Empire, but in 1945 were incorporated in the Soviet Union, 4, 250

Kuruman. Name of a mission station in Bechuanaland, South Africa, associated with Robert Moffat and David Livingstone, 2, 331

Kutb Minar, a tower 238 ft. in height, is among the ancient monuments of Delhi, India, 3, 332
Picture: 3, 335

Kut-el-Amara. A town of Mesopotamia and scene of a great battle fought between the British and the Turks in 1915, 2, 238

Kuwait. A state of Arabia on the north-western coast of the Persian Gulf. It has developed oilfields in recent years, 4, 205
Picture: 4, 205

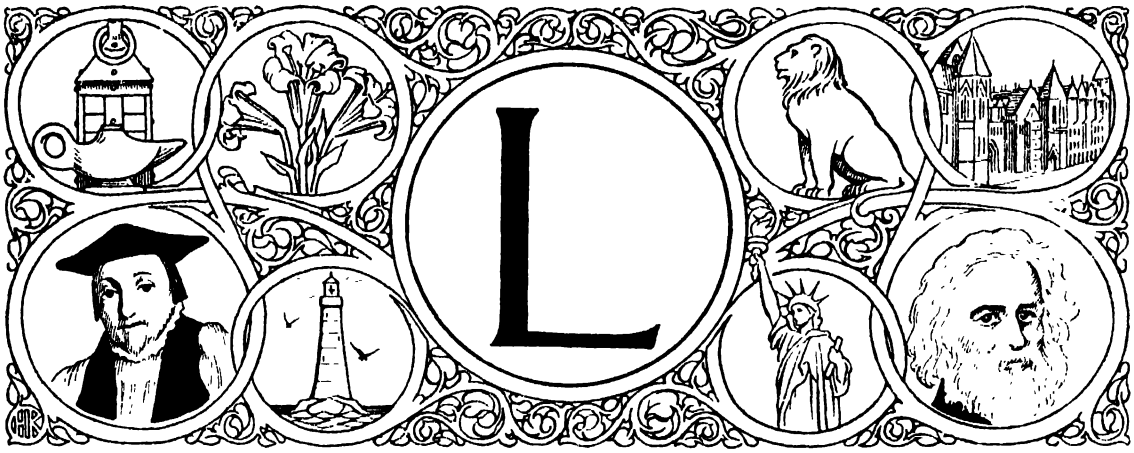
Kuzbass is the name given to a region of the Tomsk province of Russia where new steel plants are being built. Tomsk itself is in the western part of Siberia, 4, 118

Kwangsi. A large province in the southern part of China. Its capital is Kweilin.

Kyles of Bute is the name given to a waterway off the coast of Argyllshire, Scotland.

Kynance Cove is a famous beauty spot near the Lizard Point in Cornwall. Here may be seen the Steeple Rock.
Picture: 3, 46

Kyoto was once capital of Japan. It is situated on the Island of Honshu and is well-known for its art-ware, 4, 256
Pictures: 4, 248, 256



L is the twelfth letter of our alphabet. It is commonly called a liquid, that is, a consonant having a smooth-flowing sound, almost like that of a vowel. It is also called a dental sibilant, which description means a letter pronounced by bringing the tongue near the teeth and making a hissing sound.

L is often silent before another consonant; as in "talk" "folk," "calm," and "Lincoln." In Roman numerals L stands for 50.

In atlases L is an abbreviation for Lake; in L.C.C. it stands for London (County Council). In an ornamental form, £, it is the symbol for pound sterling.

Laaland, or Lolland. Name of a large Danish island in the Baltic Sea.

La Antigua. A city of Guatemala some 25 miles from the capital. It was the capital of this Central American republic until 1776, **4,** 302
Picture: **4,** 301

Laatefos is a famous waterfall of Norway, **4,** 37

Labial means having to do with the lips. The letters p, b and m are called labial consonants, or simply labials, because in uttering them one has to use the lips.

La Bine, Gilbert. A Canadian prospector who "prospected by air." Thanks to his enterprise the pitchblende on Great Bear Lake in the North-West Territories is now mined, **3,** 166

Labrador is part of Canada along the Atlantic seaboard and with Newfoundland makes the tenth province of the Dominion. The main industries are trapping and fishing, but it has rich mineral resources now being developed and unlimited potential water power, **3,** 161 *et seq.,* 183
– it may have been reached by Vikings in A.D. 1100 and was later sighted by Cabot (1497), **2,** 274, 278
—Dr. Grenfell of Labrador, **2,** 379 *et seq.*
—Goose Bay air base, **3,** 198

La Brea is near the Pitch Lake of Trinidad and is a centre of the oil industry of the island.
Picture: **4,** 391

Labuan. An island off the north-west coast of Borneo which was reunited with British North Borneo in 1946. Victoria Harbour is its very fine and safe port. There are coal mines on the island, **3,** 404
—Sir James Brooke was once the Governor, **2,** 330

Laburnum. Often known as the golden chain tree from its hanging blossoms. The wood is used in furniture making.
—every part, including the seeds, is poisonous, **1,** 350; **8,** 244

Labyrinth. A maze. Originally, a labyrinth was a building containing many winding passages, through which it was difficult to find a way out.
Greek legend tells of a labyrinth in which Minos, King of Crete, kept a Minotaur, a monster with a human body and a bull's head.
The hero Theseus entered the labyrinth, unwinding as he went a thread given him by Ariadne, Minos' daughter. After killing the monster he escaped by following the thread back to the entrance.

Lac is a resinous substance produced upon many Indian trees by the action of the female lac insect.
Mixed with turpentine, lac is used in making coloured sealing-wax and, when dissolved in alcohol, it makes varnish.

La Casa Rosada is the name of the palace of the President of the Argentine. It stands in the Plaza de Mayo, Buenos Aires.
Picture: **4,** 323

Lace is called "point" when made by hand with the needle, and "cushion" or "bobbin" or "bone" lace when made on a pillow.
Honiton, Mechlin and Valenciennes, etc., are pillow laces; and Brussels, Alençon, Maltese, etc., are point laces.

Lacerda. This was the name of a Portuguese doctor who had some share in the exploration of the African continent during the nineteenth century, **3,** 276

La Chaux des Fonds is a town of Switzerland famous for its watches and clocks, **4,** 61

Lachine Canal was cut to avoid the Lachine rapids on the St. Lawrence River above Montreal, **3,** 185

Lachine Rapids are on the St. Lawrence River and provide electric power for Montreal
The navigator Cartier called the Rapids *La Chine* (French for China) believing he was near China, **2,** 294;
– the Rapids provide hydro-electric power for Montreal, **3,** 184

La Cima is the highest point on the railway from Callao to Huancayo in Peru, **4,** 336
Picture: **4,** 331

Lackland. Name given to King John of England.

Lacock. A village of Wiltshire with a thirteenth century abbey. Both abbey and village were presented to the National Trust by Miss Matilda Talbot, the owner, **3,** 414
Picture: **3,** 410

Lacquer. A transparent varnish for covering polished brass and other metals, made by dissolving shellac in alcohol and colouring the liquid with gamboge or saffron.
Again, it may mean a black or coloured varnish used by the Chinese and Japanese in their artistic cabinet work.

Ladoga. A large lake between the country of the Soviet Union and Finland. It is the largest of all European lakes, being 125 miles in length and some 80 miles wide.

Ladrone Islands are now called the *Marianas* (*q.v.*). Ladrone is Spanish for "thief," early Spanish navigators finding the islanders so dishonest that they named their home Thieves' Islands, **2,** 284

Ladybird. Popular name for a family of small beetles (*Coccinellidae*), red or yellow in colour with black spots. The best known British ladybird is known as the seven-spot. They feed on aphides and plant pests.
Picture: **1,** 253

Lady-Bird, To the. A Poem by Anon., **9,** 96

Lady Elliot Island is north of Sandy Cape, Queensland, Australia and marks approximately one end of the Great Barrier Reef, **3,** 228

Lady of the Lake is a poem by Sir

Walter Scott. It is closely associated with Loch Katrine and the Trossachs, 3, 124

Lady of the Lamp. The name given to Florence Nightingale (*q.v.*), 2, 218

Lady's Finger. A small and dainty variety of banana, 1, 312

Lady's Fingers. A name given to the *Foxglove* (*q.v.*) and to a plant found on grassy cliffs. The leaflets grow in pairs and the flowers appear in clusters. They are bright yellow in colour.

Ladysmith. A town of Natal, in the Union of South Africa. It has coal-mines and heavy industries and is historical because of its siege in the South African War (1899–1900).

Lady's Pincushion. Popular name for *Thrift* (*q.v.*).

Lady's Smock. Name of a wild plant bearing four-petalled lilac-coloured flowers.
Special Colour Supplement. British Wild Flowers, 1, *between* 304 and 305 (Plate 4)

Lagan. A river of Northern Ireland which flows into Belfast Lough. Vessels from the shipbuilding slips of Belfast are launched into the Lagan, 3, 146

Laggan-Dam. This dam forms part of the Lochaber power scheme in Inverness-shire, Scotland. The power produced by this scheme is used in aluminium works near Fort William.
Picture: 3, 128

Lagoon. A shallow lake. Salt-water lagoons are found on the coasts of many countries.

Lagos. A district of the colony and protectorate of Nigeria in British West Africa. The port of Lagos is also the capital and chief harbour of the colony, 3, 380

La Guardia Field is the airport of the city of New York. From here air lines will take the traveller to any part of the world, 4, 269

Laguna is a fertile district of Mexico where about half of Mexico's cotton crop is produced, 4, 298

La Haye Sainte was a Belgian farm strongly defended by Wellington's troops during the Battle of Waterloo.
Pictures: 4, 22, 23

La Hogue. One of two naval battles, which really formed one, fought on May 19th, 1692, in the neighbourhood of Cape Barfleur. The final act in the battle was on the 22nd and 23rd May, when ships which had taken refuge in the harbour of La Hogue were burned by fireships. The result of this battle at Barfleur and La Hogue was to kill all the French plans for an invasion of England and the restoration of James II to the throne, 8, 8

Lahore is a district and division of the West Punjab, in Pakistan. Its capital, of the same name, is the seat of a University and is a commercial and railway centre, 3, 338
Pictures: 3, 337, 359

Laidley, Dr. An African trader who assisted Mungo Park in his preparations to explore the Niger, 2, 322

Lake Bala. See *Bala.*

Lake District, The. One of the most beautiful parts of our homeland, situated in Cumberland, Westmorland and North Lancashire, 3, 88 *et seq.*; 3, 414

Lake Dwellings are habitations built on small artificial or partly artificial islands, in lakes, or on platforms supported by piles near their shores. Remains of lake-dwellings have been found in Ireland and Switzerland. They are still used in Borneo, New Guinea, the Caroline Islands and parts of Central Africa, 9, 320

Lake Edward. A lake of the Great African Rift Valley on the borders of the Uganda Protectorate and the Belgian Congo. Along its shores there are African-owned fisheries.
Pictures: A typical Fishing Party, 3, 373
Drying the Fish, 3, 373

Lake Freighters is the name given to the special vessels that transport wheat across the Great Lakes of Canada and the U S A, 3, 179
Pictures: Grain Loading, 3, 182
On the Great Lakes, 3, 190

Lake George is a lake of the great African Rift Valley on the borders of Uganda and the Belgian Congo.
Picture: 3, 373

Lake Isle of Innisfree, The. A Poem by W. B. Yeats, 9, 85

Lake Louise is one of the picturesque lakes in the Banff National Park in the Canadian Rockies.
Photo-tone Supplement: Among the Canadian Rockies, 3, *between* 160 and 161

Lake of Forgiveness is in Jasper National Park, Alberta, Canada, and stands at the foot of the great Angel Glacier of Mount Edith Cavell.
Colour Plate: In Canada's Greatest National Park, 3, *facing* 196

Lake of the Sun. Name given to a point on the planet Mars.
Picture: 8, 150

Lake of the Woods is the name of a large lake forming part of the boundary between Canada and the U.S.A. It is situated mainly in Ontario, just east of Winnipeg, 3, 175

Lake Peninsula is the term applied to the part of Ontario, Canada, almost surrounded by three of the Great Lakes. Toronto and Hamilton are on this peninsula, 3, 181

Lake Poets is the name given to those masters of verse, Wordsworth, Southey and Coleridge, because of their association with the English Lakes, 3, 88

Lake Regillus, Battle of. A small lake in Latium, Italy, in days of old. It was famous for the defeat of the Latins by the Romans in 496 B.C. The story is told in Macaulay's *Lays of Ancient Rome*, 2, 402

Lakes may be defined as large areas of water surrounded by land.
—how lakes protect the land, 1, 42
—of Britain, 9, 309
See also "Great Lakes" *Atlas Supplement*, end of this Volume.

Lakes of Killarney. See *Killarney, Lakes of.*

Lake St. Clair is in Tasmania, Australia. Its waters are used to generate electricity at the Tarra'eah Power Station, 3, 213
Picture: 3, 237

Lake St. Clair reserve is one of **Tasmania's beauty spots**, 3, 235

Lakh is an Indian word meaning one hundred thousand. It is used of rupees. One hundred lakhs make a crore (10,000,000).

Lakshmi, in the Hindu religion, is the goddess of fortune, 3, 358

Lamaism is a variety of Buddhism, dating from the seventh century after Christ and prevailing mostly in Tibet and Mongolia. It is so called because the priests have the title of "lamas," 3, 352
Picture: 3, 353

Lamb, Charles (1775 1834). Great English essayist best remembered for his *Essays of Elia*, 7, 209
Picture: 7, 209

Lambeth. A densely populated borough of South London, it is a district of many industries. Lambeth Palace, London County Hall, and St Thomas's Hospital are here

Lambeth Palace is the London residence of the Archbishop of Canterbury and is the last of London's old riverside palaces. Its gatehouse was built about 1490 by John Morton, chief minister of Henry VII.
Picture: 3, 21

Laminated Plastics is the name applied to a material made by assembling sheets of paper or fabric saturated with artificial resin, 6, 373

Lamington National Park is a nature reserve in Queensland, Australia, 3, 228

Lammer Law is the name of a peak of the Lammer Moor Hills, 1,733 ft

Lammer Moors (or Lammermuirs) is the name given to a range of hills in south-east Scotland within easy reach of Edinburgh, 3, 115

Lamp. A vessel for holding inflammable liquid to be burnt by means of a wick for giving light or heat Now broadly applied to other vessels used for gas or electric lighting. The oldest lamps known are stone vessels found in prehistoric caves in France (*p.h.*) See also *Lighting*

Lampeter is a town of Cardiganshire, South Wales, standing on the River Teify. It is famous for St David's College, founded 1882, whose candidates are trained for the Welsh Church.

Lamprey. A fresh-water eel-like fish, though differing from the true fish in having neither scales, fins nor jaws. It has a sucker-like mouth by means of which it attaches itself to its prey. At one time it was esteemed for the table.

Lamprey, Sea. See *Sea Lamprey.*

Lamp-Shell, a mollusc, the shell of which closely resembles a Roman lamp.
Picture: 1, 11

Lanarkshire. A county of south-west Scotland. Much of it is devoted to farming and it possesses a large coalfield. It has many famous industrial districts. Lanark is the county town, 3, 121

Lancashire. A county of north-west England, it extends northwards into the Lake District and has a considerable coastline. The Mersey, Ribble, Irwell and Lune are among its rivers, and it includes the Furness area.

One of the most densely populated and busiest industrial parts of this country, Lancashire depends largely upon cotton, but it also makes chemicals, glass, soap, machinery and many other goods. It has its own coalfield and is famous for the Manchester Ship Canal. The noted holiday resort Blackpool is in the county.
Lancashire can claim Liverpool, our second seaport; Manchester; Preston; Bolton; Blackburn and other large cities and towns, **3**, 84 *et seq.*
Pictures: Manchester, the Cotton Capital, **3**, 85
Air for the Mersey Tunnel, **3**, 87
Blackpool's famous tower, **10**, 47

Lancaster. The county town of Lancashire, it is situated on the River Lune, a few miles from the sea. It has cotton and engineering interests and makes linoleum.
Lancaster was once a station of the Romans and has an ancient castle associated in memory with John of Gaunt, **3**, 109

Lancaster, House of. See *House of Lancaster.*

Lancaster, John of. Another name for John of Gaunt, Duke of Lancaster (1340 99), **1**, 325

Lancaster Sound is the stretch of water between North Devon and Baffin Land on the northern shores of North America, **2**, 303

Lance was one of the weapons used by the Greeks and Romans. The Macedonian phalanx was armed with it, and the Roman infantry.
It was the chief weapon of the Middle Ages, but disappeared gradually with the improvement of firearms.

Lanchester, Dr. Frederick William (1868 1946), is regarded as the creator of the first real motor-car. This went on the road in 1896. He also laid down the basic principles of flight on which aircraft design today largely depends. These principles were set forth by him between 1894 and 1908.

Lancing. A small town, holiday resort and residential centre on the Sussex coast. Here is Lancing College for boys.

Landau. A four-wheeled, horse-drawn carriage. Such vehicles are still seen in State processions.

Land Crabs. In many parts of the world crabs are found living on land. They make their way to the seashore to produce their eggs, **1**, 238

Landes. A province of France facing the Bay of Biscay. Once a desert, it has been reclaimed by planting trees, **1**, 314

Landgrave. An old German title, *e.g.*, the ruler of Thuringia was a landgrave.

Landi Kotal is the highest part of the Khyber Pass, in India, **3**, 340

Land of a Thousand Lakes is a description often applied to the Republic of Finland, **4**, 49

Land of Big Game is the name sometimes given to the high plateau country of East Africa, **3**, 369

Land of the Five Rivers is what the name Punjab means. The five rivers are the Jhelum, Chenab, Ravi, Beas, and Sutlej, **3**, 343

Landor, Walter Savage (1775–1864). An English poet and prose writer. His best-known work apart from his poems is *Imaginary Conversations*

Landrail. A bird to be found in cornfields, willow beds and places with plenty of cover. A summer visitor, it cries "crake-crake" and is often known as the Corncrake.

Landseer, Sir Edwin Henry (1803 73). Great English painter specially noted for his pictures of animals He designed the lions in Trafalgar Square, London. His most famous picture is "The Monarch of the Glen," **7**, 97
Pictures: Dignity and Impudence, **7**, 95
Sir Walter Scott, **7**, 205

Land's End is the name given to the most westerly point of the mainland of Great Britain at the extreme tip of Cornwall.
From Land's End to John o' Groats at the far north of Scotland the distance is more than 800 miles, **3**, 46
Picture. **3**, 2

Land Tortoise. See *Tortoise.*

Lanfranc (about 1005 89). Born in Italy, he became Archbishop of Canterbury under William the Conqueror Opened up a new era of teaching and learning in this country

Lang, Andrew (1844–1912). A modern English writer. He produced verse, essays and fairy tales and is specially remembered for his works on folklore and myths. His best-known story for younger readers is *The Gold of Familee*, **7**, 273

Langdale, is one of the resorts of the Lake District overlooked by the famous peaks known as the Langdale Pikes, **3**, 90

Langdale Pikes is the name of two peaks in the English Lake District. They are upwards of 2,300 ft in height.
Picture **3**, 88

Langeais is the name of a place in the Loire country of France Its fine old castle was built during the fifteenth century by a minister of King Louis XI.
Picture: **4**, 13

Langholm is a town of Dumfriesshire, Scotland. It stands on the River Esk and is famous for tweeds.

Langton, Stephen (died 1228). Archbishop of Canterbury. One of the leaders in the drawing up of Magna Carta, **2**, 104

Languages of the World. There are said to be over 6,000 languages and dialects in use English is spoken as mother tongue by nearly 240,000,000 people; Russian by 100,000,000, German by 115,000,000 and French by 10. 300,000. The Chinese language comes first, however, as there are probably 300,000,000 people who use it, **9**, 334–5

Langur. An Indian monkey regarded as a sacred animal. It feeds on leaves and the young wood of certain trees.
Picture: **1**, 101

Lansing, an important manufacturing city. It is capital of the State of Michigan, U.S.A. The oldest agricultural college in the U.S.A. is in East Lansing, a suburb.

Lantern Fly. Insect found in Great Britain and other parts of the world. The South American species has a development on its head resembling a lantern They are sap-suckers and cause damage to crops.

Lanterns, Goblins'. A Poem by Marion St. John Webb, **9**, 113

Lanzarote is one of the *Canary Islands* (*q.v.*).

Laon, noted for its cathedral, is the capital of the Aisne department of France.

Laos is a state of Indo-China and was formerly known as Lane Xang which means "land of the millions of elephants," **4**, 212

Laotzu (or Lao Tse) was a great Chinese philosopher of the sixth century B.C. He laid the foundations of Taoism (see *Tao*), **4**, 223
Picture. A Taoist Priest, **4**, 226

Lapageria. A climbing shrub with lily-like flowers. It was brought originally from Chili.

La Paz is a province of Bolivia. Its chief town, of the same name, is the seat of government of the republic, but Sucre is the nominal capital, **4**, 326

Laplace, Pierre Simon (1749–1827) A French astronomer who worked out a law of gravitation in the solar system and found a formula for the speed of Jupiter's satellites, **7**, 365

Lapland is the name given to an Arctic region which includes parts of Finland, Sweden, and the Soviet Union, as well as the northernmost part of Norway. Here dwell the Lapps, a wandering race of people about whose beginnings little is known, **4**, 52 *et seq.*
Pictures: In Europe's Arctic Lands, **4**, 4
Lapp Children Travelling by Reindeer, **4**, 50
The People of the Far North, **4**, 51
Going to School in Lapland, **4**, 52

La Plata is a town of Argentina, the capital of Buenos Aires district. It is about 35 miles from the city of Buenos Aires and has a cathedral and other fine modern buildings It is an important meat-packing centre

Lapp. The Lapps are people who inhabit the parts of Norway, Sweden, Finland and the Soviet Union which are known as Lapland. The Lapps are mostly a nomad people, moving from place to place with their herds of reindeer, **4**, 52 *et seq.*

Lapps. The people who live in Lapland (*q.v.*), **2**, 305
Pictures: **2**, 305

Lapwing. Often known as the Peewit; a marsh and moorland bird which leads intruders away from the nest It is a member of the Plover family, **1**, 167
Special Colour Supplement: British Wild Birds, **1**, *between* 160 and 161 (Plate 2)

Larch. A conifer of the Canadian forests, and one of the trees most recently introduced into Britain. It may reach a height of 100 ft., **1**, 321, 416; **3**, 167
Pictures: Branch with Cones, **1**, 292
Trunk of a Larch Tree, **1**, 319
Larch Tree, **1**, 413

Largs. A seaside holiday resort on the north Ayrshire coast, 43 miles south-west of Glasgow.

Lark (or Skylark). A British bird about 7 in. long, with light brown plumage, it is famous for the beauty of its song. It nests on the ground, 1, 166
Colour Plate: 1, *between* 160 and 161 (Plate 2)

Larkhall is a mining and manufacturing town of Lanarkshire. It is 16 miles south-east of Glasgow.

Larkspur. A hardy annual plant very easy to grow. It has a wide range of colours, 8, 278

Larnaca. A port of the island of Cyprus in the Mediterranean, 3, 388

Larne, a coastal town and holiday resort of County Antrim, Northern Ireland. It is a centre of the linen industry. There is a daily steamer service between Larne and Stranraer, Scotland, 3, 144
—it is a source of bauxite, 6, 131

La Rochelle. Large French seaport on the Bay of Biscay. It is a place of many industries, including shipbuilding.

Lars Porsena. King of a part of Etruria. He led an army against the Romans, 2, 51

Larut Valley is an important tin-mining region of Malaya, 3, 403

Larva. The creature that emerges from an insect's egg in a grub or caterpillar state.
Plural, Larvæ.

Larynx. The upper part of the windpipe, containing the cords or membranes by means of which the voice is produced.
The hard lump on the front of the neck which is familiarly known as Adam's apple.

Lascars. Name used to denote Oriental seamen on board British ocean-going ships. They are usually subjects of the Indian Empire and so distinguished from Malays, Chinese and other Asiatic seamen. They have a fine reputation as seamen for bravery and devotion to duty, 8, 38

Lashio is a town of north-east Burma. It is linked by railway to Mandalay and Rangoon and is best known as the starting point of the famous Burma Road into China, 4, 216

Las Palmas, on the island of Grand Canary, is the chief town of the Canary Islands which belong to Spain, 4, 140

Latex is the name given to the milk or white sap of the tree from which that invaluable commodity rubber is obtained, 3, 366. See *Rubber.*

Lathe. A device for cutting metal, wood or other material into a circular shape. The object to be "turned" or shaped is revolved by the machine; and a cutting tool, firmly supported, is brought up against it.
Lathes are of many kinds, and range in size from the miniature tool used by a jeweller to the monster lathe capable of turning castings many feet in diameter.

Latimer, Hugh (1485–1555). An English bishop and one of the great leaders of the Reformation. He was martyred at Oxford, 2, 143, 144, 406
Picture: 2, 143

Latin. The language originally spoken by the Latini, inhabitants of the plain of Latium in Central Italy. It was eventually established by the Romans as the predominant language throughout Italy. From the mixture of Latin with the dialects of Roman provinces came the Romance languages of Europe: Italian, Spanish, Portuguese, Rumanian and French. Latin ceased to be a spoken language about the ninth century, but remained the written language of the learned. A large number of words used in literary, commercial and scientific English are borrowed from the Latin.
—why our language contains so many Latin words, 9, 337

Latvia. This Baltic state, once independent, has now returned to Russia, but retains her identity within the U.S.S.R. Riga is the capital, and the country is mainly devoted to agriculture, 4, 50, 52

Laud, William (1573–1645), Archbishop of Canterbury during reign of Charles I. He was impeached by Parliament, condemned, and beheaded, 2, 160, 161. (*p.h.*)

Laudanum is a drug obtained from the poppy, 1, 350

Laughing Cavalier, The. One of the most famous paintings in the world, it was the work of Frans Hals, 7, 48
Picture: 7, 43

Launceston. (1) An interesting town and touring centre of Cornwall. The keep of its old castle still remains. (2) A city of Tasmania, the centre of a great fruit-growing district.

Launching a Ship. The hull of a big ship is one of the largest and heaviest things needing to be moved in one piece, and its launching needs much careful preparation, 5, 285
Pictures: First Time in the Water, 5, 275
A Ship is Launched, 5, 284
An Aircraft Carrier is Launched, 5, 287

Laureate means crowned with laurel or bay leaves. Among the Greeks and Romans laurel was a sign of victory, whether in war or in a contest of strength or skill.
Our Poet Laureate is not actually crowned and the word here implies that he has been honoured by being appointed a member of the Royal Household.

Laurel is an evergreen, large-leaved shrub grown as a single specimen or in the form of a hedge. The spotted variety is known as *Aucuba.* The leaves are poisonous, 8, 244

Laurens, Jean Paul (1838–1921). A famous French historical painter. He specialised in paintings of the Inquisition, or Holy Office, which had such terrible power in the Middle Ages in Spain, Italy and Germany.

Laurier, Sir Henri Charles Wilfred (1841–1919). Notable Canadian statesman. He did much to develop the railways of Canada.

Lausanne is a city of Switzerland, not far from the Lake of Geneva. It is noted for its ancient cathedral and has a university and many industries.

Lava is rocky matter that flows in a fluid or molten state from a volcano. Herculaneum, at the foot of Vesuvius, in Italy, was covered by lava in A.D. 79.
Pumice-stone is lava expanded into a sponge-like form by the action of steam, 1, 44
Pictures: Lava Cone, 1, 46
Lava Field, 1, 44

Laval is the name of the French University at Montreal, Canada, 3, 185

Lavatera. A hardy annual plant reaching a height of 3 ft. Flowers pink, rose and white. Often known as Mallow.

Lavengro was the name given to George Borrow by his gipsy friends. It was the title of one of his books, 2, 348

Lavenham is a country town in Suffolk. It was once an important centre of the cloth trade.
Picture: 3, 61

Laver Fly. An insect which strongly resembles a wasp.
Picture: 1, 297

Lavery, Sir John (1857–1941). A painter, chiefly famous for his portraits. He was an Irish boy who settled in Scotland and became a member of the Glasgow School, 7, 105, 108
Picture: 7, 109

Lavoisier, Antoine Laurent (1743–94). Son of a French lawyer, he was the founder of modern chemistry. He showed how oxygen brought about combustion, 7, 358

Law, A. Bonar (1858–1923). Conservative statesman who eventually became Prime Minister in 1922, succeeding Mr. Lloyd George. He resigned in 1923 for health reasons and was succeeded by Mr. Stanley Baldwin, 2, 412

Law. In England the two main divisions of the law are the common law and the statute law. The common law is the unwritten law based on custom and usage. The statute law is the law as laid down by Parliament, 9, 69, 337. See also *Act of Parliament, Judge.*

Law Courts. Name generally given to the Royal Courts of Justice in the Strand, London. See *In the Courts of Justice,* 9, 68. (*p.h.*)
Picture: Royal Courts of Justice, 9, 73

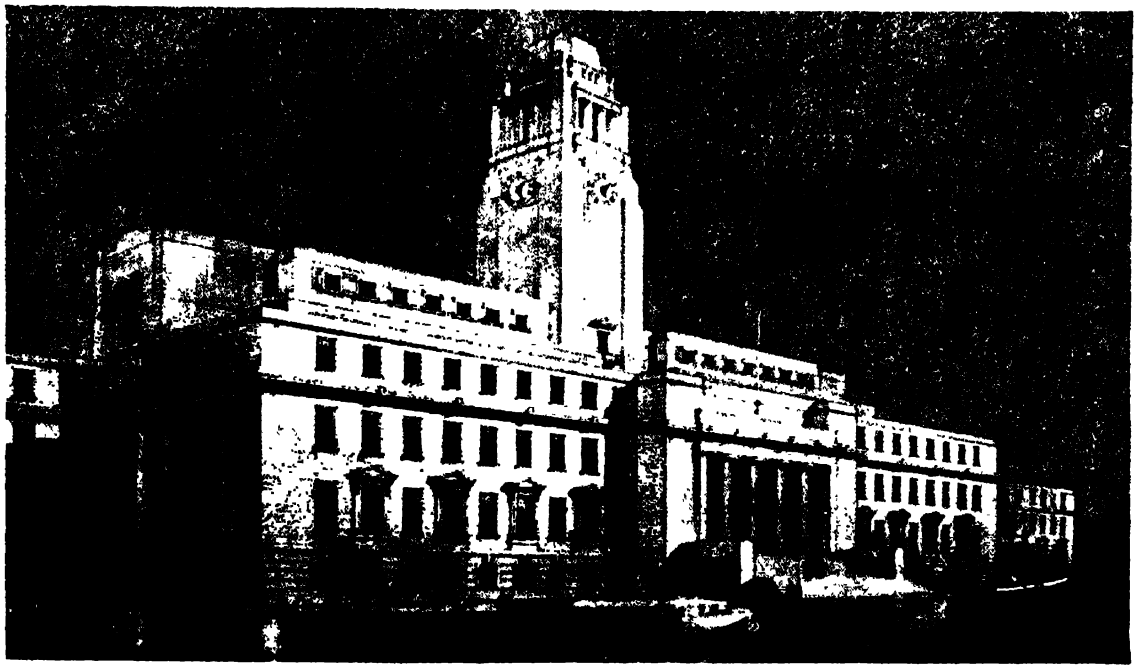
Lawes, Sir John Bennet (1814–1900) inherited an estate at Rothamsted, near Harpenden, Herts., and began experiments to the great advantage of agriculture. He was helped by Sir J. H. Gilbert (*q.v.*). In 1854 he became a Fellow of the Royal Society and was created a baronet in 1882. The Lawes Agricultural Trust was founded in 1899 to continue the work at Rothamsted, 1, 390

Lawn Mower. Why its knives are arranged spirally, 9, 346

Lawn Tennis is played on a court 78 feet in length and 36 feet in width. It is a comparatively modern game, dating from the seventies of the last century, 9, 233, 401
Pictures: Making Tennis Balls, 9, 231
Measurements of our Playing Fields, 9, 405

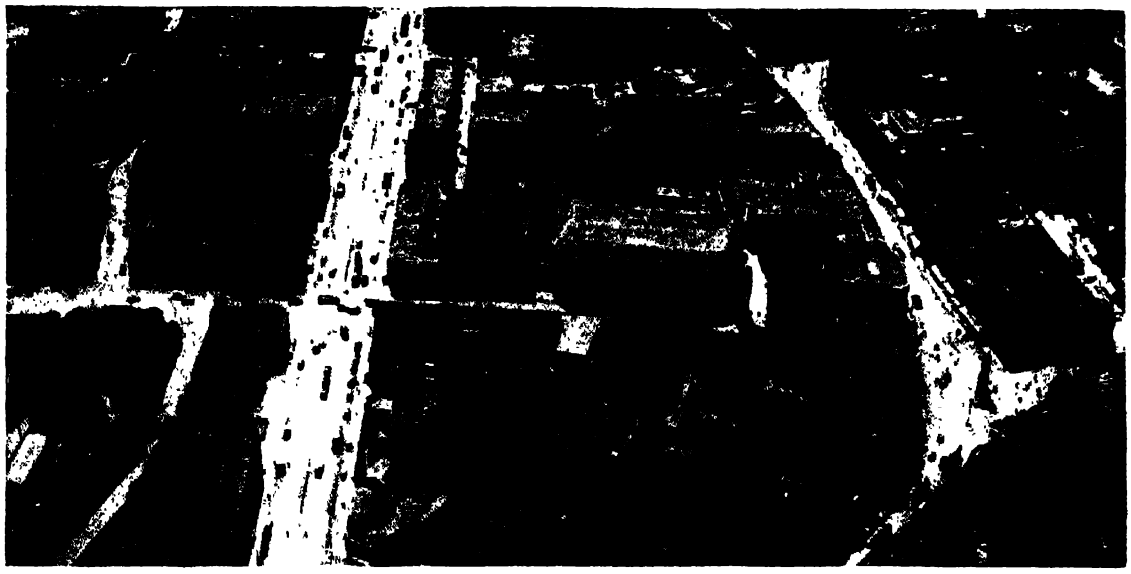
Lawrence, Colonel Thomas Edward (1888–1935). Famous British soldier who fought against the Turks and

IN LEEDS AND LEICESTER



By courtesy of Messrs. Lanchester & Lodge, F.R.I.B.A.

Leeds (see p. 214) dates back to Anglo-Saxon times and was a centre of the Yorkshire woollen trade from the fourteenth century onwards. Its University received its charter in 1904, but its School of Medicine was founded in 1831. A new University has been built and our picture shows the central block and tower, designed by T. A. Lodge.



Aerofilms

Another ancient city dating back to Roman times is *Leicester* (see p. 215) which had its own bishop for two centuries (680-874). Soon after the Norman Conquest it had its merchant guild and its growing prosperity was mainly due to the wool industry. To-day its staple industries are the manufacture of hosiery, boots and shoes and textile goods. Its University College was founded in 1921.

re-united Arab races, 2, 382 *et seq.*; 4, 204; 7, 252
—his home was at Bovington in Dorset, 3, 413
Pictures: A Pilgrims' Caravan on the Move, 2, 382
Lawrence of Arabia, 2, 383
A Sheik and his Guests, 2, 384
Tribesmen of the Desert, 2, 385
With the King of Iraq, 2, 386
A Sniper of the Arabs, 2, 387
Photo-tone Supplement: Modern British Art, 7, *between* 112 and 113

Lawrence, Rt. Hon. Lord Justice (born 1880). Noted English judge. Called to the bar in 1906, he became a K.C. in 1925 and a judge of the Kings Bench in 1932. Appointed Lord Justice of Appeal in 1944 he presided over the judges at the Nuremberg trial of Nazi war criminals in 1945–46 He became a baron in 1947 and took the title of Lord Oaksey.

Lawrence, Sir Thomas (1769–1830). A famous British painter, he was born at Bristol and brought up at Devizes. He visited every capital in Europe and painted a large number of royal personages, 7, 81
Picture: 7, 82
Colour Plate. Master Lambton, 7, *facing* 116

Layard, Sir Henry A. (1817–94). His excavations in Mesopotamia gave back to the world Nineveh and Babylon.

Lay of the Last Minstrel. The first success of Sir Walter Scott, 7, 204
Picture. 7, 204

Lay Reader. A layman licensed by a bishop to take services and help in the parochial work in the diocese.

l.b.w. An abbreviation for " leg before wicket " a cricketing term. It is the subject of Law 39 of the " Laws of Cricket," 9, 401
Picture. 10, 97

L.C.J. means Lord Chief Justice.

l.c.m. means, in arithmetic, lowest common measure.

L.D.S. means Licentiate in Dental Surgery.

Lea. A river of Hertfordshire and Essex, it flows into the Thames. It is a source of water for London's supplies (also spelt Lee), 6, 241

Leacock, Stephen Butler (1869–1944). Born in Hampshire he became known as a Canadian humorous writer. He produced *Literary Lapses, Short Circuits,* and *Nonsense Novels.* He was also a professor of economics at McGill University, Montreal.

Lead is a metallic element (symbol Pb) and a very important metal in industry. Bluish-grey in colour, it is the heaviest and softest of common metals, but is very malleable, tough and flexible. The story of how lead is mined and prepared for use is told in *Lead—The Metal of Saturn,* 6, 134
Pictures: 6, 134, 135, 136, 137, 138

Leadhills, Lanarkshire, is said to be one of the highest villages in Scotland. Its lead mines have been worked since about the end of the fifteenth century, 3, 112

Lead Pencils are made from graphite, also known as plumbago and black lead, 9, 412

Leaf-Cutting Ants. Insects which will strip every leaf from a tree in a few days, 1, 353

Leaf Insects is the name given to creatures having a close resemblance to the leaves of the plants on which they live, 3, 368

League of Nations. Founded at the Peace Conference of Paris, 1919. First meeting of the League Assembly in Geneva, 1920. Its main purpose was to bring the nations together, to promote peace in the world and avoid war by settling disputes between countries. It came to an end in April 1946 when most of its work was taken over by the United Nations Organisation (UNO), 2, 240, 242, 245, 412

Leamington is a spa and health resort of Warwickshire.

Leane, Lough. This is the name often given to the lower of the three Lakes of Killarney.

Leaning Tower of Pisa. See *Pisa.*

Leap Year is every year which is divisible by four without remainder, except the concluding years of centuries, of which only every fourth is a leap-year.

Lear, Edward (1812–88). An English artist and writer, his best-remembered work is his *Book of Nonsense* and *Laughable Lyrics.*
Poem: The Owl and the Pussy-Cat, 9, 111

Lease is a law term meaning the letting of land or property for a fixed period of years.

Lease-Lend. This is the name given to the help afforded Britain and her Allies during the Second World War by the U.S.A. before that country actually took an active part in the struggle. The Lease and Lend Bill, sponsored by President Franklin D. Roosevelt, was put forward in 1941 and permitted the U.S.A. to give unrestricted help to the Allies who were recognised as fighting America's battles for her, 2, 252

Leather-Jacket. Name given to the grub of the crane fly or daddy-long-legs It has a hard, leathery coat, 1, 258
Picture: 1, 259

Lea Valley. The valley of the River Lea, in East Anglia, has important market gardens and glasshouses, 3, 62

Leaves. A leaf consists of a base, stalk and blade. Leaves derive from the air much of the nutriment required by a plant and give out the oxygen essential to warm-blooded creatures like ourselves, 1, 290

Lebanon. An independent republic of the Middle East standing to the north-west of Palestine. It achieved independence in 1944. Beirut is the principal town and one of the chief ports. It is a predominantly agricultural country, but has iron ore mines in the north, 4, 174, 206
Picture: Lebanon Landscape, 4, 175

Le Bas, Edward (born 1904). A modern British artist whose paintings show great distinction, 7, 117

Lecco is a town of northern Italy standing at the south-eastern end of Lake Como.
Photo-tone Supplement: Land of the Eternal City, 4, *between* 112 and 113

Lecky, William Edward (1838–1903). Historian, born in Ireland, his works include the famous *History of England in the Eighteenth Century.*

Lectern. A reading desk used in churches. The Bible from which the lessons are read during services always rests on one; and, in olden times, was often chained to it.

Ledbury. A small town of Herefordshire, near the Malvern Hills. It is a centre for cider-making and is famous for its old timbered buildings.

Ledo. A town of Assam and the starting point of the Ledo Road which was built to take supplies into China during the Second World War, 4, 216

Lee is a river of Eire. The city of Cork stands on its banks, 3, 152

Lee, Robert Edward (1807–70). By far the greatest of the Southern generals in the American Civil War, though he was eventually defeated, the turning-point being the battle at Gettysburg.

Leeches are found in both fresh and salt water. They are not unlike worms and suck in their food.

Leech, John (1817–64) Well-known English humorous artist. An original member of the staff when *Punch* was started in 1841 and contributed some 3,000 drawings to that journal.

Leeds. City of the Yorkshire West Riding. It is a centre of the woollen industry and has vast engineering works and other industrial interests, 3, 83
Pictures: 7, 336; 10, 213

Leeds Castle is in Kent and takes its name from Led, or Ledian, an Anglo-Saxon who built the first castle here about the year 850.
Picture: 3, 36

Leek. A very hardy and wholesome winter vegetable. First raised in a seed-bed, the seedlings are afterwards transplanted.

Leek is a town of Staffordshire noted for its silks and other textile products. The church of St. Edward the Confessor dates back to the twelfth century.

Leeuwenhoek, Anton van (1632–1723). The Dutchman who discovered bacteria, the red corpuscles in the blood and the structure of yeast. The father of microscopical experiments, 7, 385

Leeward means in the opposite direction to that in which the wind is blowing.

Leeward Islands are part of the Lesser Antilles group in the West Indies. Some belong to Great Britain and others to the U.S.A., France and Holland, 3, 396, 399

Legal Tender. Bronze coins are legal tender up to 1s.; silver coins up to £2.

Leguspi, Miguel Lopez de. A Spanish explorer, brother-in-law of the Viceroy of Mexico, he commanded an expedition to find the Spice Islands (1564). He came to the Philippines and conquered the Moros, setting up his capital at Manila in 1571. He died in 1572.
Picture: 4, 211

Legend means a story handed down from the past, especially one about a saint or hero. Many legends are

without doubt merely the result of imagination; others may have some basis of fact. King Arthur is a legendary figure in British literature. The legend on a coin is the wording impressed upon it.
See *Fable, Myth and Legend*, **5**, 289 *et seq.*

Leghorn is a seaport and town of Tuscany, in Central Italy. It was once famous for its straw-plait, of which hats are made, 4, 151

Leghorn. Name of a popular breed of domestic poultry. The birds are well-suited to small runs, **8**, 317

Leguminous Crops are those that bear pods, such as peas and beans.

Lei. A garland of flowers such as may be seen in Hawaii, **4**, 296

Leibnitz, Gottfried Wilhelm (1646–1716). A great German philosopher. He was the inventor of a calculating machine, **7**, 365

Leicester, Robert Dudley, Earl of (1532–88). A favourite of Queen Elizabeth, he married the beautiful Amy Robsart, immortalised in Scott's *Kenilworth.*

Leicester is the county town of Leicestershire. It is an important centre in the hosiery and bootmaking trades and has many other manufacturing interests, 3, 71 and 75
Picture: **10**, 213

Leicestershire is one of the midland counties of England. It is a great centre of agriculture and sheep-farming and has a coal-field. Loughborough, Market Harborough and Melton Mowbray are well-known towns, **3**, 71

Leichardt, Dr Ludwig. A German naturalist who is famous as an explorer of Australia. In 1844 he travelled from Moreton Bay to Port Essington on the Gulf of Carpentaria. He made two attempts to cross the continent from east to west. The first (1846) failed. On the second (1848), he and his companions disappeared. **3**, 204

Leighton Buzzard. A town of Bedfordshire, standing on the River Ouze. It takes its name from the Bosart family, long resident in the district.

Leighton, Frederick, Lord (1830–96). One of the greatest of Victorian artists. He excelled in the production of classical pictures and was also a clever sculptor, **7**, 98
Pictures: Return of Persephone, **7**, 96; Captive Andromache, **7**, 119

Leinster is one of the provinces of Eire. It comprises no fewer than twelve counties.

Leipzig is a city of Saxony in Germany. It is noted as a great printing and publishing centre and for its fairs, 4, 79 —the scene of the Battle of the Nations (1813), 2, 205; 4, 76

Leith is the port of the city of Edinburgh situated on the Firth of Forth. It is a place with many industries, 3, 115; 116

Leith Hill is a part of the North Downs near Dorking in Surrey, 3, 415
Picture: **3**, 414

Leitrim. A county of Eire, a small part of it on Donegal Bay, in the Province of Connaught. It is mountainous and has many lakes.
Carrick-on-Shannon **is the county town.**

Leix is a county of Eire in the Province of Leinster. Its interests are those of general agriculture and dairy farming. The county town is Maryborough.

Leixoes, at the mouth of the River Douro, Portugal, is an outport for Oporto, 4, 137, 366

Lek is the Dutch name given to one of the arms of the River Rhine as it nears the North Sea, 4, 69

Le Loche is a town of Switzerland noted for its watches and clocks, 4, 61

Lemaitre, Jules (1853–1914). French novelist and writer of dramas.

Lemming. A small rodent animal. It migrates freely from place to place and hoards food for the winter as do squirrels and dormice, **1**, 371

Lemnos. A Greek island in the Ægean Sea. It produces fruits and tobacco.

Lemon, Mark (1809–70). An English humorous writer. One of the founders of *Punch.*

Lemon Sole. One of the flat fish found in British waters. On the upper side it is spotted, its skin being a yellowish brown.

Lemoyne is the name of the largest ship of Great Lakes fleet in Canada.
Picture: **3**, 190

Lemur. Name of a family of animals akin to monkeys but with many differences. They are found in Africa, India and Malaya and live in trees. In size the varieties vary greatly. Some are little larger than mice whilst others are as big as a terrier dog.

Lemur, Ring-Tailed. See *Ring-Tailed Lemur.*

Lemur, Slow. See *Slow Lemur.*

Lena. A lengthy river of Siberia, it flows into the Arctic Ocean, **4**, 110

Lenin (1870–1924). His real name was Vladimir Ilyich Ulianov. He was the founder and became first President of the Union of Socialist Soviet Republics (the U S S R), formed of Russia in Europe and in Asia. **2**, 412, **4**, 106, 117

Leningrad is the second largest city of the Soviet Union. It was once known as St Petersburg and then as Petrograd. It stands on the River Neva and is one of the great centres of industry in this vast country.
The city is named after Lenin, founder of the Soviet Union and its first President, **4**, 117

Lens, a colliery and iron and steel town of Northern France. It figured prominently in the war of 1914–18.

Lens. A specially shaped piece of glass used in spectacles, telescopes and magnifying glasses. It causes the rays of light which pass through it to change their direction and so makes objects appear larger or clearer.

Lent in the Christian year is the fast of forty days, excluding Sundays, immediately before Easter.

Leo, the Lion. One of the Signs of the Zodiac.

Leominster, a centre for cider, is a town of Herefordshire. (*Pron.* Lem-ster)

Léon is the second city of Nicaragua and was once the capital. It has a fine old cathedral.
Picture: **4**, 305

Leonardo da Vinci. See *da Vinci, Leonardo.*

Leonidas (491–480 B.C.), King of the Spartans. He defended the Pass of Thermopylae against the Persians, **2**, 27
Picture: **2**, 29

Leonids is the name given to meteors that appear to come from the constellation of Leo.

Leopard. One of the larger great cats. Found in Africa and throughout Asia. It possesses a beautifully marked coat, **1**, 50, 52
Picture. **1**, 50

Leopard, Black. A wild animal whose spots can only be seen in a good light, **1**, 52

Leopard, Hunting. See *Cheetah.*

Leopard's Bane. Popular name for the perennial plant *Doronicum (q.v.).*

Leopold III, of Belgium (born 1901). He came to the Belgian throne in 1934. He capitulated to the Germans during the Second World War and was detained in Germany. In 1951 he abdicated and was succeeded by his son, Baudouin, **2**, 249

Leopoldville, on the River Congo, is capital of the Belgian Congo.

Leptis Magna is the name of a Phœnician seaport whose ruins can still be seen near the Libyan seaport of Tripoli, 4, 166

Le Puy is a town of France in the Haute Loire. It is noted for its Church of St Michel, 4, 16
Picture: **4**, 14

Lerwick, a fishing port, is capital of the Shetland Islands of Scotland, 3, 140

Le Sage, Alain René (1668–1747). French novelist and writer of dramas.

Les Baux. A town of southern France where bauxite was discovered in 1821. Bauxite was then a new mineral and was named after the town, **4**, 350

Les Misérables is a famous novel by Victor Hugo, written by the French novelist while he lived in the Channel Islands, 3, 52

Lesse. A river of the Belgian Ardennes, it flows into the Meuse. Near this point stands the castle of Walzin.
Picture **4**, 26

Lesseps, Ferdinand de, Viscomte de (1805–94). The French diplomatist whose life's dream was the Suez Canal. He began it in 1854 and finished it in 1869. He failed in his project for building the Panama Canal, **5**, 53 *et seq.*
Picture **4**, 191
See also *Panama Canal* and *Suez Canal.*

Lesser Antilles. A group of islands of the West Indies lying between the Atlantic Ocean and the Caribbean Sea and stretching from Puerto Rico to the mainland of South America, **3**, 395

Lesser Black-Backed Gull. Has yellow legs, which distinguishes it from the Greater Black-Backed Gull (*q.v.*), **1**, 202

Lesser Celandine. See *Celandine.*

Lesser Knapweed. See *Knapweed.*

L'Estrange, Sir Roger (1616–1704), was a writer of pamphlets on the Royalist side, and was imprisoned and afterwards pardoned by Cromwell. Later he was appointed by Charles II as "licenser of the Press," **9**, 206

Letaba. The name of a district of Transvaal Province, Union of South Africa. There is a Native " location " there.
Picture: 3, 290

L'Etat, c'est moi ! This famous phrase means " The State! I am the State! " It was said by King Louis XIV of France who meant it to show that he, and he alone, ruled France—as was indeed the case, 4, 7

Letchworth, in Hertfordshire, was the first garden city to be planned in England. Here each house has a liberal allowance of land and there are many local industries to afford employment for the residents.

Le Tréport is a town, port and seaside resort of Northern France.

Letter Building. Making letters big and small and writing letters in a row; first lessons for tiny tots, 9, 131 *et seq.*

Letter Writing plays an important part in our lives, both in business and social affairs. It is dealt with fully in *The Magic Art of Writing*, 8, 185 *et seq.*

Letts. Name of the people who dwell in the Republic of Latvia. They are mostly engaged in agriculture.

Lettuce. Plants usually grown for salad purposes. Cos lettuces are upright in form; cabbage lettuces flattened in shape.

Levanevski was a Soviet airman who flew over the North Pole in 1938, but lost his life, 2, 365

Levant. This is a term applied to the Eastern Mediterranean, especially the shores. It may be said that Asia Minor, Syria, Egypt, Greece and other lands are countries of the Levant. The actual meaning of the word is " region of the sunrise," 3, 388

Leven is a town on the coast of Fifeshire, Scotland. It is a centre for coal-mining and the linen industry.

Leven, Loch. See *Loch Leven.*

Lever, Charles James (1806–72). Famous Irish novelist. He wrote *Jack Hinton* and *Charles O'Malley.*

Leveret. Name given to a young hare, 1, 134
Picture: 1, 134

Leverhulme, Sir William Hesketh Lever, First Viscount (1851–1925) Son of a Bolton grocer, he took to soap-making and by means of a wise policy of profit-sharing became immensely successful.
Founded the model town of Port Sunlight.

Leverrier, Urbain Jean Joseph (1811–77). A French astronomer. The discovery of Neptune, foretold by himself and J. C. Adams, is one of his many titles to fame, 8, 159

Leviathan means huge, gigantic, monstrous. The word—found four times in the Bible—means a monster living in the sea, perhaps a whale or sea-serpent.
The *Queen Elizabeth* may be described as a leviathan ship, or a leviathan among ships.

Lewes is the county town of Sussex. It is the commercial centre of a large agricultural district and stands on the River Ouse. It has the remains of an ancient castle, 3, 33
The Battle of Lewes (1264) was fought between Henry III and Simon de Montfort, the royalists being on the losing side, 2, 108

Lewis is an island of the Outer Hebrides. Its principal town is Stornoway, 3, 140

Lexington, Battle of (1775). The first engagement in the American War of Independence. Lexington is a few miles from Boston, Massachusetts, 2, 194
Picture: 2, 190

Leyden is a town of Southern Holland famous for its ancient university, 4, 26

Leyland. A town of Lancashire interested in the cotton industry.

Leyton is a borough of Essex, and includes the district of Leytonstone.

Lhasa is the capital of Tibet and a centre for merchants from many parts of the East. It is sometimes called the " Forbidden City," 4, 238
Pictures: Potala Palace, 3, 353
Temple of Haiden, 4, 232
In Red Idol Gorge, 4, 233

Liaoning is one of the nine provinces of north-eastern China (Manchuria). The provincial capital is Mukden (Shenyang), 4, 241

Liau-tung, Gulf of. This gulf is found on the coast of Manchuria and is bounded on the seaward side by the Liau-tung Peninsula. The name is also spelt Liaotung, 4, 229

Liberia. A republic of West Africa which came into being as the result of efforts made by various American societies to find a permanent home for freed Negro slaves. Liberia is thus a Negro republic. Its capital is Monrovia, 3, 382 *et seq.*

Liberty, Statue of. See *Statue of Liberty.* (*p.h.*)

Libra, the Scales. One of the Signs of the Zodiac.

Library. A collection of books for public or private use. The first circulating library was opened in 1740.
Pictures: Modern School, Warsaw, 4, 125
Richmond High School, Yorks., 7, 268

Libretto. The words written for a musical play, opera or oratorio. In the Gilbert and Sullivan operas the libretti are by the late Sir W. S. Gilbert and the music by the late Sir Arthur Sullivan.

Libya. This is an area of north Africa between Egypt and Tunis. It was an Italian colony until its conquest by the Allies in 1943 who undertook its administration. Libya became an independent State December 24th, 1951, with Emir Seyed el Idriss as King Idriss I, 4, 166

Lichens. Plants to be found on old walls, granite rocks, sea cliffs and even tree trunks. (*Pron.* Lie-kens.) 1, 354
Pictures: Half-and-Half Plants, 1, 356
Lichen-Covered Stones, 1, 356
Lichens Find a Home on Twigs, 1, 357

Lichfield is a city of Staffordshire having an ancient cathedral. It was the birthplace of Dr. Samuel Johnson.

Lick, James (died 1876). The American millionaire who founded the Lick Observatory at Mount Hamilton, California, U.S.A.

Lick Observatory, founded at Mount Hamilton, California. It is connected with the University of California.
Picture: The " Business End " of a Great Refractor, 8, 113

Liddelsdale is a valley along the banks of the River Liddel in Roxburghshire, 3, 112

Liebig, Justus von (1803–73). A German, famous as the founder of agricultural chemistry. He invented an extract as a means of using up the flesh of animals killed for their hides and fat, 7, 360

Liechtenstein, Principality of. One of Europe's little states. It occupies an area of 61 square miles between Austria and Switzerland. Vaduz is the chief town, 4, 167
Picture: 4, 168

Liége is a town of Belgium on the River Meuse. It has iron and steel works as well as collieries, 4, 24

Liepaja is a port of Latvia, the Baltic state which is once again part of Russia, 4, 52

Lifeboat. A specially-constructed vessel for saving life from shipwreck. The invention of the first practical lifeboat was shared between three Englishmen, Lionel Lukin, William Wouldhave and George Greathead. Lukin designed the non-self-righting sailing lifeboat, while Greathead built the first lifeboat which embodied some of the ideas of Wouldhave for a self-righting lifeboat. This first lifeboat was launched at Newcastle-on-Tyne in 1789 and saved many lives, 8, 65 *et seq.*
Pictures: 8, 65–68

Life Rocket is a large rocket fired from a sloping stand to carry a line from shore to a wrecked ship, or from the ship to the shore. The line is used to haul an endless rope aboard or ashore, as the case may be; and the rope is in turn used to get a stout hawser across.
A breeches buoy, carrying one person at each trip, is hauled to and fro along the hawser by means of the endless rope.

Life Saving Society, Royal. A British society founded in 1891 to provide education in life-saving and resuscitation of the apparently drowned.

Liffey. A river of Eire. It rises in the Wicklow Hills, has a length of about seventy miles and flows through Dublin, 3, 150
Picture: 3, 154

Lifford, on the eastern boundary, is the county town of Tirconaill, Eire, formerly Donegal.

Light. The natural agent by which bodies are rendered visible. From the days of the early Greek philosophers various theories have been evolved regarding the nature of light and this subject is dealt with in *The Wonderful Story of Light*, 5, 95
Pictures: A Photograph in Negative Form, 5, 96
Positive Photographic Print, 5, 97
In the Searchlight's Glare, 5, 99
To Guide the Mariner's Path, 5, 101
The Heliograph, 5, 103
A Sensitive Signalling Device, 5, 104
When Beams of Light are Twisted, 5, 104

PROGRESS IN LIGHTING



Science Museum.

From earliest times until the beginning of the nineteenth century artificial *lighting* (see p. 218) had been by oil lamps and candles. After William Murdock introduced gas lighting, street lamps came into existence and our picture shows Carlton House, Pall Mall, the residence of the Prince of Wales, one of the first places to be brightened at nightfall by the new gas lighting in 1809.



Oscar Marcus.

In the twentieth century great improvements have been made in the lighting of streets and highways. This picture shows the floodlit capital of Scotland, Edinburgh, during the annual Arts Festival. The brightly illumined walls of the famous Castle stand out against the night sky, while Princes Street on the right is a blaze of dazzling brilliance.

Why the Bedouin of the Desert Sees a Mirage, **5**, 107
How Colour Affects Flowers, **5**, 108
Colour Plate: What a Glass Prism Does to White Light, **7**, *facing* 368

Lighter. A large flat-bottomed open boat used in ports for loading and unloading ships. It is also called a "dumb" barge, being unprovided with sails and having to be towed from place to place, or carried by the tides.
In the second case it is steered by long oars, called sweeps, used very skilfully by a lighterman aboard.

Lighthouse. A building constructed on a rock or some part of the coastline to aid sea (and air) navigation. The first lighthouse of which there is any record was the Pharos at Alexandria (*q.v.*). English lighthouses are controlled by Trinity House. There are about 60 round our coasts. Scottish and Manx lighthouses (about 88 first-class and various minor lights, etc.), are under the Commissioners of Northern Lighthouses. Eddystone, the first of many famous English lighthouses, was built by Smeaton (1759), **5**, 100; **9**, 398. (*p.h.*)
Pictures: To Guide the Mariner's Path, **5**, 101
Fastnet Rock, **3**, 153
Godrevy Lighthouse; Eddystone, **8**, 105

Lighting. Lamps burning oil were used by the early civilisations and were followed by rushlights which developed into candles. Colza oil lamps came into use in the eighteenth century, but after 1860 petroleum displaced other oils.
Publ. gas-lamps were installed on Westminster Bridge in 1813. The incandescent mantle invented by Welsbach in 1886 was a great advance in this form of lighting, but electric lighting has in this century become the main illuminant. See also *What We Owe to Coal*, **6**, 13; *Heat and Light from Electricity*, **6**, 157; *How Electricity is Supplied*, **6**, 289; *This Age of Oil*, **6**, 305
Pictures: **6**, 140; **10**, 217

Lightning is an electrical discharge between two clouds or a cloud and the earth. It may take the form of a flash or spark discharge (forked lightning), or of a more gradual "brush" discharge (sheet lightning). Very rarely ball or globular lightning is witnessed, **5**, 26, **6**, 146; **9**, 352
Pictures: When the Lightning Flashes, **5**, 18; **6**, 144

Light of the World, The. This is the most famous picture of the artist Holman Hunt. The original is at Keble College, Oxford and a replica is in St. Paul's Cathedral, **7**, 94

Lightship. A vessel moored near reefs, sands or other danger points to give warning to shipping. The ship is equipped with lights and in some cases with fog signals. The first British lightship was that at the Nore, near the mouth of the Thames, in 1731.
Pictures: The "Seven Stones" and "East Goodwins" Lightships, **8**, 104

Light, Speed of. Light waves travel at the enormous speed of 186,000 miles a second, **5**, 95

Light Sussex, a white bird with black markings, is a popular breed of domestic poultry, **8**, 317

Light Waves are of different lengths, red waves being the longest and violet waves the shortest, **5**, 96

Light-Year is a term used by astronomers who use the rate of travel of light as a means of expressing the distance of the stars from the earth, **8**, 170, **9**, 300

Lignite is the term applied to the youngest kind of coal, **6**, 5

Lignum Vitæ is the name of a tree, a native of Jamaica, which exudes the fragrant resin known as gum guaiacum, used in medicine. The wood is very hard and heavy, but in much demand for certain purposes, **9**, 374

Ligny. A Belgian village between Brussels and Namur where Napoleon attacked the Prussians in the opening stages of the Waterloo campaign (1813), **2**, 206, 410

Lijm Fjord is in the north of Denmark and is used for the live storage of fish until they are needed at Esbjerg, the fish market town, **4**, 47

Lilienthal, Otto (1848-96). A German engineer, he was a pioneer in gliding, **5**, 184
Picture. A Glider with Bird-like Wings, **5**, 185

Lilies, Bulbous, form a large group. They may be planted in the open garden or in pots. Madonna, Auratum, Rubrum and Tigrinum are four popular varieties. (*p.h.*)

Lille is a town of Northern France noted for its textile and other goods. It has a population of over 200,000, **4**, 13

Lilliput is the scene of many adventures in the story *Gulliver's Travels* by Jonathan Swift.

Lilly Pilly. A blue flower found in the Australian "bush," **3**, 248

Lily is the name given to a device for floating islands or landing-strips, **7**, 395
Picture. A Floating Flexible Island for Aircraft, **7**, 396

Lily of the Valley. A perennial spring plant with white flowers, requiring a moist, shady position. It is grown from crowns, **7**, 280
Picture. **1**, 278

Lima, once the capital of the Spanish empire in South America, was founded by the Spanish conqueror Pizarro. It is now the capital of Peru and is the chief town of the department of Lima, **4**, 326

Limassol. A port of the British island of Cyprus in the eastern Mediterranean, **3**, 388

Limavady is a town of Londonderry, Northern Ireland.

Limburg. A province of Holland on the Belgian and German borders. It is a coal mining region, **4**, 31, 45

Lime. A tree with straight, tall stems and fragrant blossoms. It is a long-lived tree, much used for avenues. Also called the linden tree, **1**, 412
Picture: **1**, 410

Lime is a compound of calcium and oxygen, **9**, 404

Lime-Juice is obtained from the fruit of the sweet lime tree, which grows in the West Indies and other parts. Not to be confused with our common lime tree, **3**, 397

Limerick is a county of Eire, in the Province of Munster. It has much fertile farm land.
Limerick is the county town, on the River Shannon. It has many industries, including lace-making, **3**, 150

Limited. When this word is used after the name of a company it means that the liability of the shareholder is limited to the value of his shares, **9**, 356

Limner means a painter; an artist, especially a painter of portraits, **7**, 80

Limoges, famous for its porcelain, is a town of central France, **4**, 13

Limonite is a type of iron ore. It is mined on a large scale in Spain, **6**, 42

Limousine. A motor car body enclosed at the back and having a partition between it and the driver's seat, which is protected by an extension of the roof, the windscreen and side doors

Limpet. Member of the mollusc family. It has a cone-shaped shell and clings to rocks, **1**, 227, 228
Colour Plate: Shells, **6**, *facing* 397

Limpopo is a river of Africa. It forms the boundary between Rhodesia and the Transvaal and flows into the Indian Ocean. In length it is about 1,000 miles, **3**, 286

Linares is a Spanish town, a centre of mining for lead and silver, **4**, 136

Lincoln. (1) The chief town of Lincolnshire, its makes agricultural machinery and is a business centre for a large area. It has a famous Norman cathedral. (2) Capital of the State of Nebraska, U.S.A.
Pictures: Lincoln Minster, **7**, 306
Lincoln Cathedral and the Exchequer Gate, **3**, 69

Lincoln. The name given to a class of Australian-built passenger aircraft
Picture: **5**, 227

Lincoln, Abraham (1809-65). The greatest figure in American history after George Washington. He educated himself mainly on the Bible and Shakespeare. Became President of the United States and freed the slaves, **2**, 412, **4**, 262
Pictures: Relics of America's Past, **4**, 265
The Lincoln Memorial, Washington, **4**, 269

Lincoln Edge is the name given to the country between the Lincolnshire Wolds and the River Trent. It is a limestone ridge gapped at the city of Lincoln by the River Witham, **3**, 71

Lincolnshire. A county of the eastern side of England, second in size to Yorkshire. Trent and Witham are two of its rivers and it is divided into parts or districts, *e.g.*, Holland, Kesteven and Lindsey.
Lincoln is the county town, **3**, 69
Pictures: Lincoln Cathedral and the Exchequer Gate, **3**, 69

Lincoln's Inn is in London and is one of the Inns of Court (*q.v.*). It was once the London estate of the third Earl of Lincoln, and its buildings include some dating from the sixteenth century. The New Hall (1843-45) contains a valuable library.
Picture: **3**, 23

Lindberg, Charles A. (born 1902). In 1927 he flew alone in the aeroplane

Spirit of St. Louis from New York to Paris.

Linden. Another name for the *Lime Tree* (*q.v.*).

Lindisfarne, sometimes known as Holy Island, is situated off the coast of Northumberland. Here St Aidan founded a monastery in the seventh century.

Lindos is on the island of Rhodes about 40 miles from the city of Rhodes Here St. Paul landed on his journey to Rome.
Picture: **4,** 161

Lindsay, James Bowman (1799-1862). A brilliant Scots scientist. As early as 1834 he had discovered the capabilities of electricity for heating and lighting

Lindsey is a district of Lincolnshire

Linen is a valuable material or cloth made from the fibres of the flax plant. Belfast in Northern Ireland is a centre of the linen industry, **3,** 144 *et seq*
Picture: The Harvest of Flax, **3,** 149

Linen Thread, produced from flax, is said to be the strongest fibre known to man, **3,** 147

Line-throwing Guns are used by lifeboatmen in their work of rescue
Picture **8,** 66

Ling is another name for heather

Ling. Name of a fish of the cod family found in many European waters It is one of the food fish.

Lingula. A shell-fish which has not changed its appearance since earth's earliest ages, **1,** 36

Linklater, Eric (b. 1899) Scottish author who has written a wide variety of novels, short stories, essays and plays; also children's books His *Wind on the Moon* was awarded the Carnegie Medal for an outstanding book for children, **7,** 278
Picture **7,** 277

Linlithgow is the county town of West Lothian, Scotland. Its ruined Palace is famous as the birthplace of Mary, Queen of Scots
Picture **3,** 121

Linnaeus, Carolus (Carl Linné) (1707 78) A Swedish scientist whose tours in Lapland and other countries enabled him to classify plant-life and lay the foundation of modern botany, **7,** 230 (*Pron.* Lin-e-us.)

Linnet. Small British bird, a member of the finch family. It is noted for the purity of its song
Special Colour Supplement British Wild Birds, **1,** *between* 160 and 161 (Plate 3)

Linoleum is floorcloth made by spreading a mixture of linseed oil and powdered cork on a canvas backing. Kauri gum is sometimes added to the mixture, **9,** 412

Linotype. A machine with a keyboard like that of a typewriter, which casts printing type in the form of slugs, each having the type for a whole line (line of type) projecting from one edge The machine, invented in 1866, is now generally used in newspaper work, **9,** 209 *et seq.*
Pictures: A Linotype and its Operator, **9,** 213
In the Linotype Room, **9,** 214

Lint is the term used to describe the cotton as it is first obtained from the plant.

Lion, The. This is one of the peaks on Milford Sound in the South Island of New Zealand.
Picture: **3,** 259

Lion. Known as the "King of Beasts." A carnivorous animal found in Africa and Persia, and, more rarely, in India It belongs to the cat family, **1,** 47. (*p h*)
Pictures: Lion and Lioness, **1,** 47
Lion at the London Zoo, **1,** 48
Lion Cub, **1,** 51
Lioness in the Jungle, **1,** 49
Lion Tamer, **1,** 53

Lion and the Mouse, The. A Tale from the Fables of Æsop, **5,** 325

Lionhead Goldfish. A fish with a swollen, distorted head, difficult to rear, **1,** 225

Lion of Waterloo is a monument erected on the battlefield of Waterloo to commemorate the part played by the Belgians in this conflict.
Picture **4,** 23

Lion People is a name given to the Singhalese who dwell in the Dominion of Ceylon. They claim descent from the *Sinhalas*, or Lion People, of old, **3,** 361

Lion Rock of Sigiriya. See *Sigiriya, Lion Rock of*

Lion's Cousins. Term used to describe the leopard, panther, jaguar, puma, lynx, etc., **1,** 50

Lion's Head, so called from its shape, is a peak on one side of Table Mountain, **3,** 281

Lipari. Name given to a group of volcanic islands to the north of Sicily Lipari is the largest of these islands and another is Stromboli, **4,** 154

Lippe. A part of Germany in the British Zone of occupation, its principal river being the Weser Its chief towns are Detmold, Lemgo and Horn

Lippi, Fra Filippo (1406 1469) One of the great painters of Florence.
Picture **7,** 6

Lippman, Gabriel (1845 1921). A French physicist, he invented a method of colour photography.

Liquorice comes to us mainly from Italy, though sometimes grown in England It consists of juice pressed from the roots of a plant belonging to the pea and bean tribe, **1,** 334

Lisbon, on the River Tagus, is the capital of Portugal and has a magnificent harbour, **4,** 140
— Napoleon sent an army to take Lisbon, **2,** 201

Lisburn is a linen town of Antrim, Northern Ireland. It stands on the River Lagan.

Lisieux is a town of northern France to the east of Caen.

Liskeard. A market town of Cornwall. Near by is the rock pile called the Cheesewring
Picture **3,** 45

Liskow is a model village in the district of Poznan in central Poland It is a co-operative village and its activities include weaving and mixed farming.
Picture **4,** 124

Lismore is a town of Waterford, Eire. It stands on the River Blackwater.

Lister, Joseph, Lord (1827 1912). Born in Essex of a Quaker family he introduced antiseptics into surgery and thus saved countless lives, **2,** 220; **7,** 382
Picture: **7,** 385

Liszt, Franz (1811-86). One of the greatest pianists who ever lived and a notable composer and conductor. He was a Hungarian, **7,** 180
Picture: **7,** 173

Litharge is another name for lead oxide, **6,** 138

Lithgow is an iron and steel town of New South Wales, Australia, on the western edge of the New South Wales Coal Basin, **3,** 236

Lithographic. Used for, or printed by lithography, the art of printing designs and pictures in colours from specially prepared stones, **9.** 392

Lithuania. Once independent, this Baltic state has now returned to Russia but retains her identity within the U.S.S.R. The capital is Vilnius (Vilna), **4,** 50, 52
—it first became part of Russia during the reign of Catherine the Great, **4,** 106

Little Atlas Mountains are a range in north Africa lying south of the coastal plain, or *El Tell,* of Algeria, **4,** 166

Little Auk. A rare winter visitor which comes to us from Greenland and the Far North. In some respects it is like the Guillemot

Little Belt, The. One of the approaches to the Baltic Sea, its waters run between the island of Funen and the Jutland Peninsula, **4,** 46
Picture **4,** 47

Little Emperor. This was the name given to George Simpson (*q.v.*) who went to Canada in 1820 and became Governor-in-Chief there for the Hudson Bay Company, **3,** 158

Little Grebe. A British water bird familiar on ponds and lakes. Known popularly as the dabchick.
Special Colour Supplement British Wild Birds, **1,** *between* 160 and 161 (Plate 4)

Littlehampton. Popular resort on the Sussex coast at the mouth of the River Arun, **3,** 36

Little Karroo is a tableland or plateau of South Africa high above the coastlands, **3,** 286

Little Minch is the strip of water that divides the Inner from the Outer Hebrides, **3,** 139

Little Moreton Hall is a beautiful sixteenth century mansion near Congleton in Cheshire. It is cared for by the National Trust, **3,** 411
Picture **3,** 406

Little Orme is a headland on the Carnarvonshire coast near Llandudno, **3,** 105

Little Ouse. See *Ouse.*

Little Parliament. The successor to the "Rump" of the Long Parliament (*q.v.*) which was dismissed by Oliver Cromwell in 1653 It placed its powers in the hands of Cromwell and then resigned It is also known as "Barebones Parliament," **2,** 164

Little Rock, a great centre of commerce and industry, is capital of the U.S.A. State of Arkansas.

Livadia Palace. A residence of the Tsars of Russia in the Crimea, now a home of rest for workers.
Picture: **4,** 116

Liver. This is a large gland in our bodies which acts as a sort of clearing-house and store-house, **8**, 221
Picture: **8**, 225

Liverpool and Manchester Railway, completed in 1830, was our first passenger steam railroad, **5**, 122
Pictures: **5**, 115

Liverpool Cathedral is built mainly from the designs of Sir Giles Gilbert Scott, O.M., and is our largest English Cathedral, **7**, 326
Picture: **7**, 327
Colour Plate: **7**, *facing* 268

Liverpool, Lancashire. Next to London the greatest seaport in the British Isles and a large centre of commerce and industry, **3**, 72, 84
—its water supply, **3**, 102; **6**, 248
Pictures: Liverpool Docks, **3**, 30 and 31; **4**, 348
Air for the Mersey Tunnel, **3**, 87
Colour Plate: One of Britain's Sea Gateways, **3**, *facing* 85

Livery Companies of London are corporations which had their beginnings in the old trade guilds. There are now about eighty of them, **9**, 328
See *Guild.*

Livestock. Improvements in breeding, **1**, 387

Living Stone. Name given by Charles Darwin to the cushiony rock plant Bolax (*q.v.*).

Livingstone. A town of Northern Rhodesia and the former capital of this province. It was superseded in 1935 by the present capital, Lusaka (*q.v.*), **3**, 300

Livingstone, David (1813-73). Scots doctor and missionary. He first visited Africa in 1841. He discovered Lake Ngami and explored the Upper Zambesi. Found the famous Victoria Falls and Lake Nyasa. He disappeared for five years, but was found in 1871 by H.M. Stanley. He was buried in Westminster Abbey, **2**, 331 *et seq.*; **3**, 296
Pictures: At the Scottish National Memorial, **2**, 331
Through Swamps and Forests, **2**, 332
Attacked by a Lion, **2**, 333
Fighting for Freedom, **2**, 334
When Courage is required, **2**, 335
A Most Historic Meeting, **2**, 336
The End of Livingstone, **2**, 337
The Last Days, **2**, 338
Two Views of the Victoria Falls, **3**, 298
Colour Plate: The Victoria Falls in Southern Rhodesia, **3**, *facing* 277

Livingstone Island is the name given to a small island at the Victoria Falls on the Zambezi river, **3**, 296

Livingstone Memorial. See *Scottish National Memorial.*

Lizard, Bearded Dragon. See *Bearded Dragon Lizard.*

Lizard, Common. A creature frequently found in hot countries but rare in Britain, **1**, 149
Picture: **1**, 150

Lizard, Flying. See *Pterodactyl.*

Lizard, Plated. Name given to the Stegosaurus (*q.v.*).

Lizard, The. A point on the coast of Cornwall and the most southerly in Great Britain. Nearby is the famous Steeple Rock, **3**, 49
Picture: **3**, 46

Llama. An animal found only in South America. Referred to as the Camel of the New World.
Picture: **4**, 330

Llanberis, Carmarthenshire, is a town with slate quarries and the starting place for tours of Snowdon, **3**, 100 and 103

Llanberis Pass is a famous pass in Snowdonia, winding among the slopes of Snowdon itself, **3**, 106

Llandaff, near Cardiff, is celebrated for its cathedral. Its history dates from the earliest times of Christianity in Britain. This historic Welsh cathedral was restored in 1836.
Picture: **3**, 98

Llandrindod Wells. Inland health resort of Radnorshire. It is famous for its mineral waters.

Llandudno is a noted holiday resort of Carnarvonshire. It stands on the shores of a bay between the headlands of the Great and Little Orme, **3**, 86, 108
Picture: **3**, 105

Llanelly, Carmarthenshire, is a port of the South Wales tin industry, **3**, 96

Llangollen. A town, holiday resort and touring centre of Denbighshire, North Wales, **3**, 100

Llanos is the name given to tropical grass-lands in the northern parts of South America, **4**, 330

LL.D. means Doctor of Laws, a university degree.

Llewelyn. A Welsh Prince who lived in the reign of Edward I. His rightful title was Lord of Snowdon, **2**, 111; **3**, 106

Lliwedd is a peak of Snowdonia, 2,947 ft. in height, **3**, 103

Lloyd George, Rt. Honourable David (1863-1945). Son of a Welsh schoolmaster, he became a solicitor and was elected to Parliament in 1890. He became Prime Minister during the Great War of 1914-18, and was Britain's chief representative at the Peace Conference. He was created an Earl in 1945, but died shortly afterwards, **2**, 412

Lloyd's is the short name given to the great association of underwriters which insures ships and their cargoes against loss.
It sprang out of an association of merchants formed by Edward Lloyd, a Welshman, at a London coffee-house towards the end of the seventeenth century, **5**, 270, **8**, 35
Picture: **8**, 58

Lloyd's Register is a British society which classifies ships of all kinds and carries out surveys to ensure their seaworthiness. When found satisfactory by a Lloyd's surveyor a ship is given its class, the highest being 100 A1. The society publishes information about ships all over the world at very frequent intervals and its Annual Register of ships and yachts is a standard reference work, **5**, 268, 270

Llugwy is a river of North Wales, famous for its Swallow Falls, **3**, 106
Picture: **3**, 104

Loach. Small fresh-water fish of the carp family, common in Europe, and often found in shallow, gravel-bottomed streams in Britain, especially in mountainous districts. It is about 4 in. in length.
Special Colour Supplement: British Fresh Water Fishes, **8**, *between* 256 and 257

Loam. Name applied to a brownish garden soil rich in decaying vegetation, **8**, 272

Loanda is another name for St. Paul de Loanda (*q.v.*).

Lobengula. A King of the Matabele tribe of the Bantu people. Bulawayo stands where he once had his chief kraal, **1**, 173; **2**, 219

Lobsters. Crustaceans with pincer-like limbs. They are caught in lobster pots in deep water. They carry their eggs glued to hairs of the swimmerets, **1**, 235; **8**, 79
Pictures: Lobsters in Earth's Earliest Ages, **1**, 15
Present-day Lobster, **1**, 235

Lobsters, Prehistoric. Scorpion-like creatures who lived in earth's earliest times, **1**, 14
Picture **1**, 15

Locarno is a town of Switzerland on Lake Maggiore. It was the scene of a conference between statesmen of many countries which led to the Locarno Pact (1925), **4**, 64

Location is the word used in South Africa to indicate the part of a town specially set aside for the native Africans, **3**, 284

Loch is the name given in Scotland to what English people call a lake, and also to long inlets from the sea almost surrounded by land.

Loch Katrine. A famous Scottish lake of Perthshire and Stirlingshire. Water for the city of Glasgow is drawn from the loch, **3**, 124

Loch Leven, in Kinross-shire, Scotland. In length it is about 12 miles, **3**, 126

Loch Lomond is the largest lake in Scotland. It is situated between Stirlingshire and Dumbartonshire and is 23 miles in length, **3**, 115, 128
Pictures **5**, 71

Loch Long is in Argyllshire, Scotland, and opens out into the Firth of Clyde. Its beauty attracts artists from all parts of the world.
Picture: **3**, 129

Loch Ness. See under *Ness*

Loch Ryan is a long opening from the sea in the Galloway district of Scotland.

Loch Shiel is to be found between Argyllshire and Inverness-shire in the Scottish Highlands. Here Prince Charles Edward first unfurled his banner.
Picture. **3**, 127

Loch Sloy. See *Sloy, Loch.*

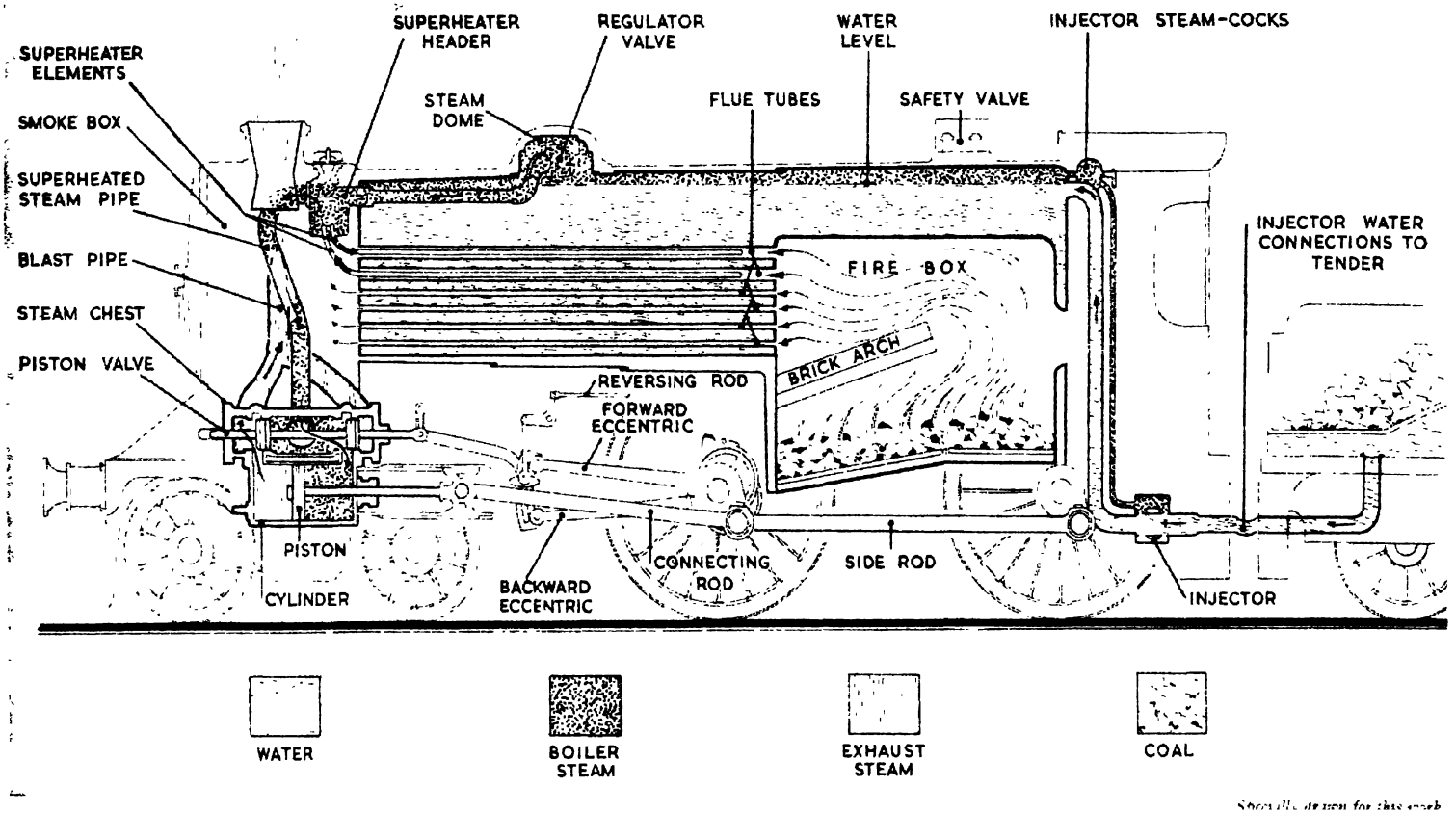
Lochy is the name of a river and loch of Inverness-shire, Scotland, **3**, 128
Picture: **3**, 126

Locke, John (1632-1704). A great British philosopher, **7**, 364

Lockerbie. A town of Dumfries-shire in the centre of a sheep-raising country.

Lockheed Constellation. A type of aeroplane used for long-distance flights carrying about 50 passengers.
Picture: **5**, 208

Locks. Name given to spaces of water enclosed by gates. They are used when vessels have to be transported from lower or higher levels of



Specially drawn for this work

HOW A LOCOMOTIVE WORKS

Steam, which drives the *locomotive* (see p. 222), is raised by means of the coalfire in the fire-box which is surrounded by water in the boiler. From the fire-box extend the boiler tubes, also surrounded by water in the boiler. Hot gases pass from the fire-box through these tubes and steam is created. The hotter the steam becomes the greater the pressure, led by a tube through the steam chest to the cylinder, the steam forces the tightly-fitting piston to move. This piston is fitted to the connecting rod which in turn is joined to the crank of the driving wheel, and the driving wheel is turned. But the flow of steam must be regulated and made to move the piston in both directions. This motion is brought about by the piston in the steam chest on the top of the cylinder. This piston is connected to the axle of the driving wheel by the eccentric. The steam must first pass through the steam chest and so pushes the small piston forward; a hole in the top of the cylinder is thus opened and the steam hits the main piston and pushes it forward, but the eccentric motion causes the other end of the piston in the steam chest to open a hole at the other end of the cylinder and steam rushes in and pushes the main piston back again. The used steam is blown out through the blast pipe and so makes the "puff-puff" of the locomotive.

the main stream. Locks give entrance to docks and are found on rivers and canals.
—the largest locks are those of the Panama Canal, 5, 60
Pictures. Taking a Ship Down Stairs, 5, 55
At the Gatun Locks, 5, 59
Linking Pacific and Atlantic, 5, 61
Lake Gatun, Panama Canal, 5, 62
Lockyer, Sir J. Norman (1836–1920). A most eminent British astronomer. Modified the spectroscope so that he could study the prominences on the sun.
Locomotion. Name of a famous railway engine built by George Stephenson. It was the first to run on the Stockton and Darlington Railway in 1825, 5, 122
Colour Plate 5, *facing* 128 (Plate 1)
Locomotive. A machine which is able to move itself from one place to another. In the strict sense a motor car is a locomotive; but the word is most commonly used of engines running on rails. See *Railways.*
Picture: How a Locomotive Works, 10, 221
Locomotive Works, Round a. This chapter deals with all sides of the work which is carried out in the making of railway engines in the drawing offices, the laboratory, the forging shop, the boiler shop, etc., 5, 147 *et seq.*
Pictures: A Scene in the Erecting Shops, 5, 147
A Worker at the Lathe, 5, 148
Finishing the Boiler, 5, 149
With the Welder at Work, 5, 150
Finishing the Wheels and Cab, 5, 151
Fitting Connecting Rods, 5, 152
Fitting Axle-Box Guides, 5, 152
Setting the Valve, 5, 153
Ready for its Final Tests, 5, 154
Where Locomotives are Tested, 5, 155
Railway Apprentices, 5, 157
Finishing Touches on Locomotives, for India, 5, 158
A Locomotive goes Aboard, 5, 159
Testing the Bearings and Check Valves, 5, 160
Locust. A variety of grasshopper found in many tropical countries. It is most destructive, 9, 370
Picture: 3, 375
Lode is a name given in the Fenlands to an open ditch, 3, 66
Lode-mining. See *Tin.*
Lodestone is magnetic iron ore. The word means leading stone or guiding stone, and is derived from the fact that the earliest form of mariners' compass was probably a splinter of this floated on water, 6, 146
Lodge. Name given to the home of the beaver, 1, 118
Lodge, Sir Oliver Joseph (1851–1940). Great British physicist. With Muirhead, he invented a method of wireless telegraphy, 6, 201; 7, 372
Lodge Pole Pine. A coniferous tree which grows on the Pacific coast of California, 1, 317
Lodi was the last of the Afghan kings of Agra, in India. He was routed by Babar in 1526, 3, 326
Lodi, Battle of (1796). At this battle in northern Italy, Napoleon defeated the Austrians, 2, 410
Lodore Falls. A waterfall of Cumberland, in the English Lake District. It is near Lake Derwentwater.
Lodore, The Cataract of. A Poem by Robert Southey, 3, 88
Lodz is a large industrial town in Poland, 82 miles south-west of Warsaw, 4, 125, 128
Loess is the name for huge deposits of very fine wind-blown sand brought by the north-westerly winds from the Gobi and deposited in the plain of northern China, 4, 240
Lofoten Islands, off the north-west coast, are the centre of Norway's cod-fishing industry, 4, 44
—they have a famous maelstrom.
Picture 4, 39
Lofty Mountain Ranges are highlands of South Australia at whose foot is the State capital of Adelaide. Mount Lofty itself is 2,384 ft. high, 3, 204, 220
Logan is the name given to a rocking stone. There is a logan stone on the Cornish coast near Penzance and another on Dartmoor. It is also the stone in a Welsh Bardic Circle from which an Eisteddfod is announced.
Logan, Mount, is a peak of Alaska over 19,000 ft. high, 4, 294
Log-Book. Diary or journal which must be kept of a ship's voyage by the navigating officer in charge.
Logwood is the name of a red wood found in the heart of certain Central American trees. It is used for dyeing, 3, 399
Lohengrin, one of the knights of the Holy Grail, is the hero of a romance which Wagner took as the subject of his opera of the same name.
Loire is the name of France's longest river, upwards of 600 miles in length. It empties into the Bay of Biscay. Along the banks of the Loire are some of the finest old castles in France.
Picture. 4, 13
Lollards. This was the name given to the English followers of Wycliffe, the religious reformer and translator of the Bible into English. The name is thought to have come from a German word *Lollen,* meaning "to sing," for the Lollards were fond of singing psalms and hymns, 2, 128
Loma Tina is the loftiest peak on the island of Haiti. It is 10,300 ft. in height.
Lombards, a Germanic race which invaded Italy in 568 and settled in what was called Lombardy after them. They were conquered in 774 by Charlemagne.
Their descendants became the bankers of Italy; and some of them came to London and acted as money-lenders. They gave their name to Lombard Street, in which they had their offices.
Lombardy is a large district of northern Italy famous for its fruits and agricultural produce. Its plain contains busy engineering and textile cities such as Milan, 4, 150
Lombardy Poplar. See *Poplar.*
Lomond. A paper and wood-pulp centre on the west coast of Newfoundland near Bonne Bay, 3, 161
Lomond, Ben, a mountain rising above Loch Lomond, 3,200 ft. in height.
Lomond, Loch. See *Loch Lomond.*
London, capital of the British Commonwealth of Nations, is one of the greatest city-ports in the world. Originally a Roman fortress, it owes its importance to its position on the river Thames. The name London really belongs to "the City" proper, but is also given to the County of London. Add the outlying suburbs and you have Greater London which to-day has a population of well over 8 million, 3, 7 *et seq.*
- its earliest history, 1, 1
- the Great Plague and Fire, 2, 169, 408
- London during the Second World War, 2, 251, 394
—it began as a Roman fort, 2, 403
—Bishopric of London established, 2, 403
Broadcasting House, 6, 204
London's Water Supply, 6, 239 *et seq*
- Business of the G.P.O., 6, 277
—St. Paul's Cathedral, 7, 310
—Docks, 8, 87 *et seq.*
—London County Council, 9, 66
— Street Names, 9, 337
—Picture Galleries, 9, 340
- Markets of London, 9, 404
Pictures In Prehistoric Times, 1, 6
In the Days of the Romans, 1, 7
Nurse Cavell Monument, 2, 237
Women Wardens' Great Work, 2, 393
To Office as Usual, 2, 395
King Alfred rebuilds London's Walls, 2, 405
Victory Day, 1946, 2, 415
Buckingham Palace, East Front, 3, 7
St. Paul's Cathedral, 3, 8; 7, 312, 313
The new Waterloo Bridge, 3, 8
The Tower of London, 3, 9
Tower Bridge, 3, 9
Guildhall, 3, 10
The Lord Mayor's Procession, 3, 10
The Bank of England, 3, 11
The Strand, 3, 11
Whitehall, 3, 12
Piccadilly, 3, 12
Natural History Museum, 3, 13
British Museum, 3, 13
Australia House, 3, 14
Westminster Abbey, 3, 15, 16; 7, 311
Houses of Parliament, 3, 17
Trafalgar Square, 3, 18; 10, 225
Westminster Cathedral, 3, 19
Canada House, 3, 20
Regent Street, 3, 20
Hyde Park, 3, 21
Lambeth Palace, 3, 21
Cleopatra's Needle, 3, 22
County Hall, 3, 23
Lincoln's Inn, 3, 23
Peter Pan Statue, 3, 24
Lifeguards, 3, 25
Monument, 3, 26
General Quay Scene at King George V Dock, 4, 344
For a S. American Oil Refinery, 4, 345
Lorries for Finland, 4, 347
London Omnibus To-day, 5, 167
London Airport, 5, 224
On the London River, 7, 260
London's Postal Railway, 6, 287
Coronation Chair, 7, 310
Westminster Hall, 7, 323
Tower of London, 7, 325
A Modern Church, 7, 328

The Freedom of the City, 9, 63
Law Courts, 9, 68, 73
On Point Duty in London, 9, 75
When the Lights Go Up, 10, 225
Colour Plates: Westminster Bridge and Big Ben, 3, *Frontispiece*
The Pool of London, 3, *facing* 84
Photo-tone Supplements: Famed in England's Story, 2, *between* 128 and 129
Modern Architecture: London University, Modern offices, flats, etc, 7, *between* 288 and 289

Londonderry is a county of Northern Ireland, a centre of the linen industry and of general agriculture.
Londonderry (or Derry) is the county town. It has a good harbour and during the Second World War was the main base in the Battle of the Atlantic, 3, 144

London Gazette. Official organ of the British Government, published on Tuesdays and Fridays each week
It began in 1665 at Oxford during the Plague but became the *London Gazette* in 1666 and has continued ever since, 9, 206

London Missionary Society, formed 1795. This Society sent David Livingstone to Africa, 2, 331

London, Pool of. See *Pool of London.*

London Stone. Set in the wall of St. Swithin's Church, Cannon Street. The stone from which the Romans measured distances along the roads radiating from the capital, 9, 404

London, Tower of. See *Tower of London.*

London Transport Executive. On January 1st, 1948, the tube and underground railways, together with certain lines formerly owned by the main line railway companies operating in the London area, were taken over by the new authority known as the London Transport Executive. Also taken over by this authority were the 'buses and coaches which covered 2,622 route miles, and the trams which ran over 102 route miles, as well as trolley 'buses covering over 255 route miles.
- London Underground Railways, 5, 138 *et seq.*
Pictures: Making a new Underground Railway Station, 5, 134
Osterley Station, Middlesex, 5, 135
Eighty Feet on Moving Stairs, 5, 135
In an All-electric Signal Cabin, 5, 136
Gant's Hill Underground Station, 5, 137

London University. University College was founded in 1827 to provide university education free from religious tests. In 1836 a charter was granted giving power to give degrees. London University was the first to grant degrees to women (1878). It now includes some 20 medical schools. The three women's colleges are Royal Holloway, Bedford and Westfield. The headquarters of the University are at Malet Street, Bloomsbury.
Photo-tone Supplement: Modern Architecture, 7, *between* 288 and 289

London's Highest Buildings are St. Paul's Cathedral (365 feet), the Victoria Tower at Westminster (336 feet) and Westminster Cathedral (284 feet), 7, 335

Long. means, in geography, longitude.

Long Dragons was the name given by the Vikings (early Norse adventurers) to their ships, 3, 155

Longest Reign. Louis XIV of France was on the throne for seventy-two years, but was not the actual ruler during his early years The Emperor Francis Joseph of Austria reigned and ruled for seventy years, 9, 330

Longfellow, Henry Wadsworth (1807–82). A great American poet. His most popular poem is *Hiawatha*
The Village Blacksmith is best known among his shorter works, 7, 151
- his *Evangeline* commemorates the expulsion of the first settlers from Nova Scotia, 3, 183
Pictures: The Return of Hiawatha, 7, 151
The Courtship of Miles Standish, 7, 152. (*p h*)

Longford is an inland county of Eire, in the Province of Leinster. Farming is its most important industry.
Longford is the county town.

Long Horn Beetles are found in South America. They are of vivid colouring and may be as much as 6 in. in length.

Long Island. An island off the north Atlantic shore of the U S A on which a considerable part of the great city of New York stands 4, 268,

Long Island, Bermuda. See *Great Bermuda.*

Longitude means the distance of a place east or west of a given meridian. A meridian is an imaginary line drawn over the surface of the earth from pole to pole, crossing the Equator at right angles
For geographical purposes the surface of the earth is supposed to be crossed by 360 meridians, a degree apart The meridian of Greenwich is generally taken as the starting-point, and is marked 0 in maps, as places on it have no longitude.
There are 179 meridians of east longitude and 179 meridians of west longitude, numbered in order from the Greenwich meridian. Meridian 180 has longitude, but it is neither east nor west, being exactly opposite meridian 0.

Longitudinal means running lengthways, as distinguished from running across.

Longleat is the name of a famous Wiltshire seat of the Marquis of Bath It was built about 1567, 7, 320, 321

Long Parliament, the last Parliament of Charles I, met in 1640, was partly dispersed in 1648 by Colonel Pride—the remnant, called the "Rump," sentenced King Charles to death in 1649; was turned out by Cromwell in 1653; re-assembled, was expelled and re-assembled a second time in 1659; and finally dissolved in 1660, 2, 161

Long Rampart, The. This was the term used to describe the Great Wall of China, 4, 228

Longships is the name given to a lighthouse situated just off Land's End at the extreme tip of Cornwall.
Picture: 3, 2

Longstaff, Dr. He was medical officer and naturalist of a Mount Everest Expedition, 2, 389

Long-tailed Tit. A British bird about 5½ in. in length found in wooded districts It builds a ball-shaped nest, 1, 146
- its eggs, 1, 171

Longton is a district of the Potteries It is included in the borough of Stoke-on-Trent, 3, 73; 9, 19:
Picture: An Artist on Porcelain, 9, 199

Longville, Texas, is an important oil centre of the U.S.A, linked by pipeline to Norris City, Illinois, 4, 274

Long White City was the name given to the part of Italy ruled by Numitor, 2, 47

Long White Cloud was the term applied to New Zealand by the Maoris, who came originally from Polynesian Islands, 3, 260

Longwood House. This house is on the British island of St. Helena in the South Atlantic and was where Napoleon lived his last years in exile. The house and its grounds were presented to the French by Queen Victoria, and the French flag now flies there.
Picture: 3, 393

Longyear City. This is the name of the main coal-mining station in the Svalbard group of islands in the Arctic. The islands belong to Norway.
Picture: 4, 39

Lonicera is the family name of the flowering plant *Honeysuckle (q.v.)*

Looe is a seaside holiday centre of South Cornwall. China clay is exported from Looe, which has fishing interests.

Looking Glasses were first made in the fourteenth century by Venetians, 5, 102

Loom means to appear in the distance. Before a thunderstorm dark, threatening clouds loom up in the sky

Looms are the machines by means of which threads of wool, cotton, silk and other materials are woven into fabric.
A simple loom may be made in cardboard, 8, 383
Picture. 8, 385

Loops are sometimes used instead of buttonholes. See *Buttonhole Loops.*

Loosestrife. See *Purple* and *Yellow Loosestrife*

Lord Chancellor. A high State official who acts as speaker of the House of Lords, presiding over the meetings of the peers. He is a member of the Cabinet, appoints judges and justices of the peace, and may preside over the Court of Appeal.
His official seat is the Woolsack, 9, 318

Lord Lieutenant. The King's representative in each county, usually the Keeper of the records and president of the Territorial Army Association. He also recommends the names of persons suitable to be appointed as Justices of the Peace, 9, 338

Lord Mayor's Show. A procession which takes place every year in London on November 9th to mark the election of a new Lord Mayor or chief magistrate.
The Lord Mayor rides in a state coach with mace-bearer and mace.
Picture: 3, 10

Lord of Snowdon. The rightful title of the Welsh Prince Llewelyn, 2, 111

Lord Protector. The title given Oliver Cromwell by the Little or Barebones, Parliament in 1657, 2, 164, 407
Colour Plate: Oliver Cromwell becomes Lord Protector, 2, *facing* 157

Lords and Ladies. Popular name for the wayside plant cuckoo-pint (*q.v.*).

Lords, House of. The House of Lords has its origin in the old feudal system, and at first consisted solely of the barons and land-owning classes, or "temporal" peers, whose rights descended from father to son, and the two archbishops and certain bishops. New temporal peers are appointed by the Queen, usually for distinguished service to the nation, and the Lords Spiritual are represented by the two archbishops and a number of bishops, 9, 62. See also *Parliament.*

Lords Marcher were the overlords of the Marches, the border separating England and Wales.

Lorelei. A siren in German fairy tales. She sang to lure passing travellers to their doom, 4, 70
Picture: The Lorelei Rock, 4, 67

Lorenzo Di Medici (1449-92) known as Lorenzo the Magnificent, was one of the rulers of Florence in Italy. A statue of him was carved by Michael Angelo, 7, 16
Picture: 7, 15

Lorient, on the Bay of Biscay, is a French seaport and important naval depot.

Lorne, Firth of. Strip of water between the Island of Mull and Argyllshire.

Lorrain, Claude de (1600-82). A well-known French artist, he gained fame from his landscapes, 7, 63
Picture: 7, 63

Lory. Name of a family of parrots found in Australia. The birds have very long tails and brush-shaped tongues with which they gather their food.

Los Alamos, New Mexico, is said to be the only place in the world where atomic bombs are manufactured, 4, 294

Los Andes is a town in Chile where the Chilean Trans-Andean Railway connects with the railway system of Argentine. Its full name is Santa Rosa de los Andes, 4, 321

Los Angeles is a city of California, south of San Francisco. It is a centre of the fruit business. Hollywood, the home of film production, adjoins, 4, 274
Photo-tone Supplement: From New York to Hollywood, 4, *between* 272 and 273

Lostwithiel is an ancient town of Cornwall in the valley of the Fowey.

Lota is an important coal exporting town of Chile on the shores of the Bay of Arauco, 4, 324

Lothian is an ancient name given to an area of Scotland stretching roughly from the Cheviots to the Forth.
In recent times, we speak of the Lothians, *i.e.*, East Lothian, or Haddingtonshire; Midlothian, or Edinburgh; and Linlithgow, or West Lothian.
—**the Lothian coalfield, 3, 121**

Lötschberg is the name of a railway tunnel through the Alps between Kandersteg and Brig, 4, 64

Lotus Arabicus. A plant which, when young, is safely eaten by cattle. At the flowering stage, however, it contains prussic acid, 1, 350

Lough is a word used in Ireland to describe what in England is a lake and in Scotland a loch.

Loughborough. A town of Leicestershire, standing on the River Soar. It is noted as a bell-casting centre and also makes machinery.

Lough Erne. See *Erne, Lough.*

Lough Foyle, is an opening from the sea on the northern coast of Ireland. It penetrates inland for 15 miles, meeting a river of the same name, 3, 146

Lough Neagh. The largest lake in the British Isles, situated in Northern Ireland It is 17 miles in length and about 11 miles in width, 3, 141

Louis XI was King of France from 1461 until his death in 1483. He was one of the most able kings that France had and set up a strong government where before there had been weakness and disorder, 2, 406

Louis XIII. King of France from 1610 until 1643. For eighteen years of his reign, his first minister was Cardinal Richelieu (*q.v.*), 4, 7

Louis XIV. He was King of France from 1661 until his death in 1715. He actually ascended the throne in 1643 at the age of four, but did not begin to reign until 1661. During his reign, the French monarchy was at the height of its power and renown. He was known as the *Grand Monarque,* 2, 172, 174; 4, 7 *et seq.*

Louis XV. King of France, he reigned from 1715 until 1774. His reign brought the throne into discredit and paved the way for the French Revolution, 4, 8

Louis XVI (1754-93). King of France. He was dethroned by the French Revolution. A revolutionary Convention tried him for treason and he was guillotined, 2, 196, 206, 410; 4, 10

Louis XVIII was the brother of King Louis XVI of France and returned to that country to occupy the throne in 1814. He fled when Napoleon escaped from Elba, but returned again to reign until his death in 1824, 2, 410

Louisberg. A town in Nova Scotia, Canada. Scene of one of the great military victories of General James Wolfe (1758), 2, 186
Picture: 2, 184

Louisiana is one of the Southern States of the U.S.A. It is a great centre of the cotton industry and also produces sugar and maize. There are valuable sulphur mines in the State.
Its capital is Baton Rouge.
Pictorial Map: 4, 291

Louis Quatorze means Louis the Fourteenth and is the name given to the period in French history when that king reigned. This was a time of French literary and artistic greatness, 4, 8

Louisville is a city of Kentucky, U.S.A., on the Ohio river. Its population of over 319,000 makes it the largest city in the State.
Picture: 4, 288

Lourdes, in the Haute-Pyrenees of France, is a famous place of pilgrimage. It stands on the River Pau.
Picture: 4, 18

Lourenço Marques, standing on Delagoa Bay, is the principal town and capital of Portuguese East Africa or Mozambique. It is a place of great antiquity and has a fine harbour.

Louth is a county of the Province of Leinster, in Eire. Its principal town is Dundalk.

Louvain. A manufacturing town of Belgium with a fine old town hall, 4, 19

Louvre, The, is in Paris and was once a residence of the rulers of France, it corresponds today to our National Gallery in London, 4, 12

Lover, Samuel (1797-1868). Irish novelist. He wrote the famous *Handy Andy,* which is still widely read, and many songs including *Molly Bawn.*

Love-Birds. See *Budgerigars.*

Love-in-a-Mist. Popular name for the hardy annual plant, *Nigella* (*q.v.*).

Low Countries. This is the name given to the kingdoms of Holland and Belgium in Europe, 4, 19

Lowell, on the Merrimac River, is a manufacturing town of Massachusetts, U.S.A.

Lowell, James Russell (1819-91), American essay writer and poet, best-known for his *Odes* and *The Biglow Papers.*

Lowell, Percival (1855-1916). An American astronomer. He built an observatory in Arizona (U.S.A.) specially to study the planet Mars, 8, 144

Lower Unterwalden. One of the Swiss cantons which began the Confederation in 1291 with two other cantons, Uri and Schwyz. It has since become the two cantons of Obwalden and Nidwalden, 4, 56

Lowestoft is an important herring fishing and sprat port on the Suffolk coast. It is also a popular holiday resort, 3, 60

Lowes Water is the name of one of the lakes in the English Lake District.

Lowicz is a place in Poland between Warsaw and Lodz. It is noted for the national costume worn by its inhabitants.
Picture: 4, 125

Lowlands, The, is the name given to the Midland Valley of Scotland, 3, 114

Loyalist. One who is loyal to his sovereign, government or country, especially in time of trouble.

L.P. means Lord Provost, the equivalent in Scotland of a Lord Mayor in England.

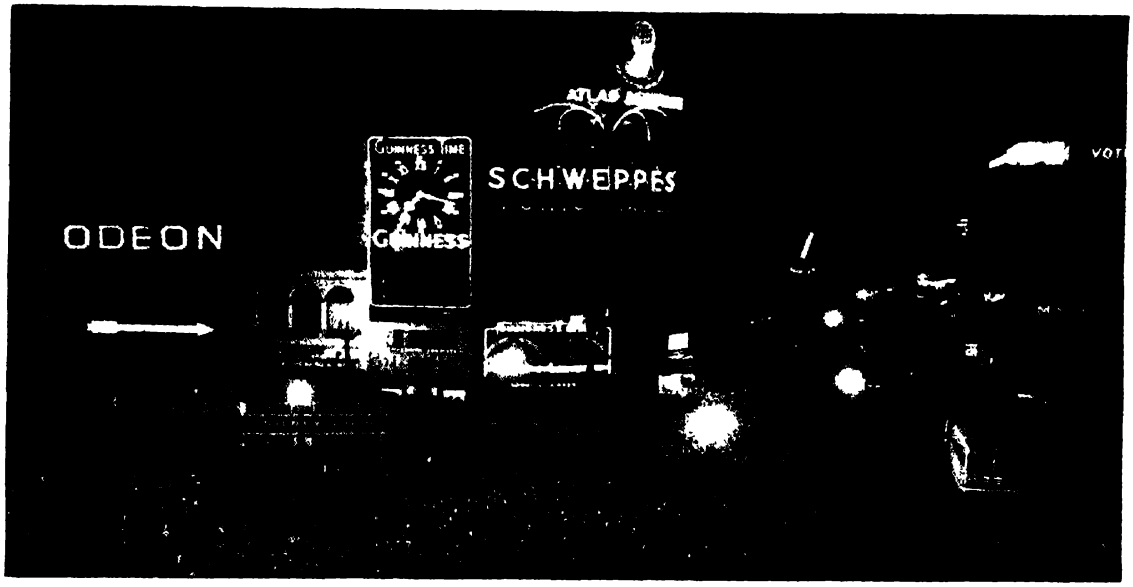
L. S. D. means *librae, solidi, denarii, i.e.*, pounds, shillings and pence.

Lt. or Lieut. means Lieutenant, a rank in the Royal Navy and British Army.

Lt.-Col. means Lieutenant-Colonel, a rank in the British Army.

Ltd. means Limited. Always used after the titles of limited liability companies.

WHEN THE LIGHTS GO UP



Central Press.

London (see p. 222) at one time might have competed with Paris, the city of light, or with the dazzling blaze of New York's night time, but for ten years the lights were dimmed in the capital of the Commonwealth. Singers foretold of gaiety to come " When the lights go up in London." Here we have the scene in Piccadilly when at last the bright lights and signs appeared again.



P.A.—Reuter.

Londoners came out in their thousands and brought with them their children who had never seen London in the brightness of her night illuminations. This photograph was taken during Christmas week when Trafalgar Square became a glittering centre with the 60-feet Christmas tree, a gift from Norway, gleaming with coloured lights while the floodlit fountains played in a blaze of brilliance.

Lübeck is a Baltic port of Germany. It was a leading city of the Hanseatic League, **4**, 48, 73
Picture: **4**, 72

Lubrication is the oiling or greasing of moving parts of machinery, or the state after being so treated.

Lucas, John Seymour (1849–1923). Great English painter noted for his masterly treatment of historical subjects.
Pictures: The Armada is in Sight, **2**, 153
Drake on Board the *Revenge*, **2**, 153
Charles II and Wren at St. Paul's, **2**, 167
Rebel Hunting after Culloden, **2**, 183
A New Whip for the Dutch.

Lucayos. See *Bahamas.*

Lucerne is a canton or province of Switzerland which gives its name to the capital. Its chief town is a great resort for tourists and a manufacturing centre.
The city stands on Lake Lucerne, **4**, 56, 61
Picture: **4**, 59
Photo-tone Supplement: The Continent of Europe, **4**, *between* 112 and 113

Lucerne. A plant of the vetch family, grown for giving to cattle in its green state or for making into hay. It attains a height of 3 ft. and has pretty purple flowers.
The roots of the plant go so deeply into the ground that lucerne is better able to resist drought than grass, and is therefore widely cultivated in hot, dry countries. It is also called alfalfa.

Lucifer Matches were invented in 1827. At first they consisted of strips of wood, tipped with a chemical mixture which ignited when it was rubbed briskly on sandpaper.

Lucknow. The second largest city in the United Provinces of the Dominion of India. It was heroically defended during the siege of 1857, **3**, 360

Lucky Ducks, The. A Poem by Enid Blyton, **9**, 107

Lucky Edward was one of the ships of the ill-fated Sir Hugh Willoughby, **2**, 304
Picture: **2**, 304

Lucky Lady II. The name of an American Air Force Superfortress which in 1949 made the first non-stop flight round the world
Picture: **5**, 221

Lucy. The name of an old English family which has lived at Charlecote Park, near Stratford-upon-Avon since the twelfth century. Sir Thomas Lucy had William Shakespeare brought before him for poaching, **3**, 406 *et seq.*
Picture: **3**, 408

Ludlow is a town of Shropshire, standing on the River Teme. It has the ruins of an ancient castle erected by the Normans.

Ludwig II (1848–86). King of Bavaria, in Germany. He spent vast sums of money on building fantastic castles and eventually went mad and killed himself, **4**, 84
Photo-tone Supplement: Built by Moor and Monarch, **4**, *between* 112 and 113

Ludwig's Canal is an inland waterway of Germany. It forms a direct link between the great rivers Rhine and Danube, **4**, 90

Ludwigshafen is a town of Germany, on the River Rhine. It is connected with Mannheim by a bridge and is a centre for dyes and chemicals.

Luftwaffe. The German Air Force, **2**, 248, 250 *et seq.*; **5**, 210
—Air Raids on Britain, **2**, 394 *et seq.*

Lugano is a large lake of Switzerland and northern Italy. The name is also given to a Swiss town standing on the lakeside, **4**, 64

Lugger. A sailing vessel having lug sails, *i.e.*, sails with a spar along the top. There are one, two and three-masted luggers.

Lugnaquillia, 3,039 ft., is the highest peak of the Wicklow Mountains.

Lukin, Lionel (1742 1834), a coach-builder of London, was one of the first Englishmen to devote attention to the building of lifeboats, **8**, 65

Lulea is a seaport of northern Sweden. It is a centre for the shipping of iron-ore, and pig-iron is now produced near the port by electric methods, **4**, 38

Lumber Jack. A woodman or forester of Canada, **3**, 167 *et seq.*
Pictures: Sorting Logs, **3**, 167
Making a Raft, **3**, 168
On their way to the Saw Mills, **3**, 169
Turning Trees into Newspapers, **3**, 170
From Canada's Forests, **3**, 173
Timber starts its Journey to the Mills, **4**, 380
Newsprint from Canada, **4**, 383

Luminous means giving out light. Luminous paints are used to coat surfaces, such as the dial or hands of a watch, so that they may be visible in total darkness.
The disc of the sun is so intensely luminous that one cannot look at it direct.

Lunar. Relating to the moon; caused by the moon A lunar month is shorter than any calendar month, except February, lasting only twenty-nine and a half days. It is measured from new moon to new moon.

Lunar Alps is the name given to some mountains of the moon. See *Moon.*

Lunar Halo. A form of ring sometimes to be seen round the moon.

Lunaria is the family name for the biennial plant, *Honesty* (*q.v.*).

Lunar Mountains is another name for the mountains of the moon. See *Moon.*

Lundy Island is found at the entrance to the Bristol Channel It is very rocky, **3**, 46

Lung Fish. A fish to be found in Australian waters, so called because it puts its head out of the water to breathe, **3**, 246

Lungs, of which we have two are among the most important organs of the body. They are the breathing or respiratory organs, and their main function is the transport of oxygen from the air to the place where it is used in the body, and the transport of carbon dioxide from the body to the air. They are spongy in texture, **8**, 218

Lungyi is the name given to the cotton "skirt" worn by Burmese men and women, **4**, 220
Picture: **4**, 215

Lupin. A hardy annual plant with flower spikes in a variety of colours. L. polyphyllus. The perennial form of this plant.

Lupton's Tower is a portion of Eton College, erected in the sixteenth century.
Picture: **3**, 27

Lurgan is a town of County Armagh in Northern Ireland. It is a centre of the linen trade, **3**, 144

Lurigedan is the name of a table-topped mountain in the Vale of Cushendall, Ulster.
Picture. **3**, 150

Lusaka. The capital of the province of Northern Rhodesia. There are said to be rich iron-ore deposits near the town, **3**, 300

Lusitania. Cunard liner, torpedoed and sunk by a German submarine off the Old Head of Kinsale, May 7th, 1915, with a heavy loss of life, **8**, 50

Lute. This was a stringed instrument derived from the Arabs, and was played by plucking the strings with a plectrum It was in use in the west up to the seventeenth century, but has now given place to the mandoline, similar but smaller

Luther, Martin (1483 1546) A great German scholar and reformer To him is due the start of the religious Reformation, **2**, 140, 406; **4**, 74 *et seq.*
Picture. Luther burns the Pope's Bull, **2**, 408
Where Luther worked on his Translation of the Bible, **4**, 75
Luther's Study in the Wartburg, **4**, 76

Lutine Bell. In 1799 H M S *Lutine* was wrecked off the Dutch coast with gold and silver bullion aboard worth over a million pounds Salvage operations recovered a certain amount over many years, but the wreck eventually became too deeply embedded One relic recovered was the ship's bell and this is now used at Lloyd's to warn members that important shipping news is to be announced, **8**, 54
Picture: **8**, 58

Luton. A town of Bedfordshire most famous for its straw hats, though it has now a great motor industry and other engineering interests, **3**, 18

Lutterworth. A small town of Leicestershire, the centre of an agricultural district. The great reformer John Wycliffe was rector of Lutterworth.
—death of Wycliffe, **2**, 128

Luttrell Psalter. The excellent penmanship of the monks before printing was introduced is well-known. The Luttrell Psalter, written about 1340, is a fine example.
Picture: **8**, 195

Lutyens, Sir Edwin Landseer (1869–1945). Famous British architect. He designed many notable houses and buildings.
The Cenotaph in Whitehall, London, was his work.

Luxemburg, or Luxembourg, is a Grand Duchy in Europe, bordered by Belgium, Germany, and France. It is one of the Benelux countries. There is iron-ore in the Duchy and its iron and steel industry is important. Cattle breeding, leather, and wines are other important activities, **4,** 167 *et seq.*
—invaded by Germany, **2,** 248
Pictures: Luxembourg town, **2,** 248
The Dancing Pilgrims of Echternach, **4,** 171

Luxor, on the River Nile, is famous for its Temple and for the ruins of Thebes, the ancient capital, **4,** 196
Picture: **4,** 193

Luzon is the largest island in the Republic of the Philippines. It has an area of more than 40,000 square miles. On it is Manila, the present capital of the republic, **4,** 214
Pictures: In the Philippine Republic, **4,** 209
A Church in Manila, **4,** 211
The State of Legaspi, **4,** 211
Terraced hillsides in the Philippines, **4,** 214

Lycaon. An animal of the hyæna type also known as the Cape Hunting Dog

Lych-Gate is a gate at the entrance to a churchyard and is covered by a roof, **9,** 40[1]

Lycoperdon Bovista. Scientific name of the fungus giant puff-ball (*q.v.*)

Lydia, a country of the Asia Minor of ancient times having Sardis as its capital. It was most powerful in the reign of its king Croesus, **2,** 1

Lydney is a town of Gloucestershire, a business and industrial centre in the Forest of Dean.

Lyemun Pass is a stretch of deep water about a third of a mile wide separating Hong Kong from the Chinese mainland.
Picture: **4,** 244

Lyme Hall, near Stockport, Cheshire, was the seat of the Newton family for 600 years until its last owner handed it over, with all its parklands, to the National Trust in 1947. The lands on which it stands were given to Sir Thomas Danyers by the Black Prince, **3,** 410
Picture: **3,** 408

Lyme Regis. Small seaside resort of Dorset with an ancient pier known as the Cobb. The place figures in *Persuasion,* by Jane Austen.
—skeleton of ichthysaur found here, **1,** 26
—and remains of plesiosaur, **1,** 26
—the Duke of Monmouth landed here in 1685, **2,** 172

Lymington is a port and town of Hampshire, in the New Forest. Ferry steamers connect with the Isle of Wight.

Lymph is the name given to the clear fluid in our blood which goes out from the heart as far as the capillaries, **8,** 216

Lympne. A small town of Kent famous as a centre for civil flying, **5,** 203

Lyndhurst is a small town of Hampshire, in the New Forest.

Lyngby is a place in Denmark where there is an unusual open air museum devoted to arts and crafts of the Danish countryside, **4,** 47

Lynmouth is a town on the coast of north Devon. Nearby is Watersmeet which is now a National Trust property.
Picture: **3,** 412

Lynton, a holiday resort on the coast of north Devon. It stands on high ground and has below it the seaside town of *Lynmouth,* **3,** 51

Lynx. Wild animal of the cat family. Still found in Europe as well as in Tibet and North America, **1,** 56
Picture: **1,** 55

Lyon, Sir John. Founder of the family of Queen Elizabeth, the Queen Mother. He married a daughter of King Robert of Scotland in 1376, **2,** 244

Lyonnesse is a lost land supposed to have existed off the coast of Cornwall and closely associated with the Knights of the Round Table and the legends of King Arthur. The Scilly Islands are said to be all that is left of it, **3,** 46

Lyons ranks as the third city of France. It is a centre of the silk trade, but has many other industries. At Lyons the Saone joins the Rhone, **4,** 14, 352

Lyra (the Harp) is the name of the constellation or group of stars which include Vega, **8,** 170
Picture: A Ring Nebula in *Lyra,* **8,** 174

Lyre. This obsolete musical instrument was very much in favour with the ancient Greeks, although it probably had its origin in some more eastern country. See *Musical Instruments.*

Lyre Bird. This is an Australian bird, about the size of a pheasant. It is so named because the tail feathers of the male are displayed in the form of a lyre. It is a remarkable mimic, **3,** 246
Photo-tone Supplement Wild Life in Australia, **1,** *between* 336 and 337

Lyric is the name given to a form of poem because it was originally intended to be sung to the lyre. Now applied to any poem of a reflective or meditative nature.

Lys is a river of France and Belgium. In some parts it forms a boundary between these two countries, **4,** 24

Lysander (fifth century B.C.) A Spartan general who defeated the Athenians at sea and captured Athens.

Lyte, Henry Francis (1793-1847), English hymn-writer, author of *Abide with Me.*

Lytham St. Annes is a residential town and holiday resort of Lancashire, to the south of Blackpool.

Lyttelton is in the South Island of New Zealand. It is the port for Christchurch and the Canterbury Plains, **2,** 371; **3,** 263, 270

Lytton, Edward George Bulwer-Lytton, Lord Lytton (1803-73). Distinguished chiefly as a novelist, his *Last Days of Pompeii* brought him fame, **7,** 274
He also wrote successful plays and took a considerable part in politics.



Maan is a town of Transjordan and a railway centre, 2, 384

Maas is the name of a river of Holland. See *Meuse*.

Maasluis, a port of Holland, near Rotterdam.

Maastricht, standing on the River Meuse, is an industrial town of Holland, capital of the Limburg district.

Mabinogion, The, is a collection of ancient Welsh tales, of which an English translation was first published in 1838. Among the tales are some telling of King Arthur and his knights, 9, 323

Macadam, John Loudon (1756–1836). He gave his name to the system of road-making invented by him, and broken road stone is still described as "macadam." He became surveyor-general of metropolitan roads in 1827.

From his time dates the great improvement in British roads which took place before the coming of railways, 5, 37

Macao is on the island of the same name at the mouth of the Canton River, south China, and with two adjacent islands forms a Portuguese colony, 2, 320

Macaque. Name of a variety of monkey found in Northern Africa, Gibraltar and other parts. The animals live in colonies in thickly-wooded country.

Picture: 1, 102

Macaroni. A paste made of wheaten flour and forced through tubes. A favourite food of the Italians it is largely grown on the plains of Naples and Apulia, 4, 152

MacArthur, General Douglas (born 1880). American General who commanded the U.S. Forces in the Far East 1941–42. Later he reconquered the Philippines 1944–45, and after the surrender of Japan took command of the Allied occupation troops in Japan. He was replaced by General Ridgeway in 1951 as commander of the U.N. forces opposing Chinese Communist armies in Korea, 2, 258; 4, 248

Macassar is a town of Celebes, an island of the Dutch East Indies. From it came macassar oil, once freely used on the hair and the origin of the anti-macassar.

M is the thirteenth letter of our alphabet. In pronouncing the sound which it stands for, one brings the lips together and allows the breath to escape through the nose. Hence it is called a labial (lip) nasal (nose) consonant. It is also one of the liquid consonants.

In many words it is followed by B or P ; as in "lamb," "comb," "camp," "lamp" and "ramp." An M surrounded by a circle has some resemblance to the face of an owl, the bird chosen to represent the sound by the ancient Egyptians. The Romans used M for 1000 ; and we employ it as an abbreviation in H.M. (His or Her Majesty) ; M.P. (Member of Parliament) ; M.A. (Master of Arts) ; and, in calendars, for Monday.

Macaulay, Rose. Modern British writer, she has produced many brilliantly witty books, including *Dangerous Ages*, *Keeping Up Appearances*, and *They Went to Portugal*, 7, 264

Macaulay, Thomas Babington, Lord (1800–59). Well-known English writer and politician. His *History of England* is famous, while his only volume of verse *Lays of Ancient Rome* is still widely read. He was buried in Westminster Abbey, 7, 211

Macaw. Bird of the parrot family found in South America and noted for its vivid colouring.

Macbeth is the title of Shakespeare's great tragedy. Macbeth is said to have been the thane of Glamis, in Scotland, 2, 244

Macclesfield in Cheshire is a centre of the silk industry, and an important manufacturing town. It is about 18 miles north-east of Crewe, 4, 364

McClintock, Captain. He commanded Lady Franklin's expedition of 1857 and discovered the fate of Sir John Franklin's earlier expedition to the North-West Passage, 2, 303

McClure, Sir Robert John le Mesurier (1807–73). Well-known British explorer. It was he who eventually made known to the world the truth about the North-West Passage (1854).

Macdonald is the name of one of the oldest of the Scottish clans. Many members of the clan were massacred (1692) at Glencoe.

Picture: 3, 126

Macdonald, Flora (1722–90). A heroine of the Jacobite cause. She watched over Prince Charles Edward at Culloden and helped him to escape, 2, 182

Macdonald, George (1824–1905), Scottish poet and novelist. He wrote many stories for girls and boys, including *The Princess and the Goblin*, and *At the Back of the North Wind*, 7, 273

MacDonald, James Ramsay (1866–1937). Prominent British statesman. He was Prime Minister of the first Labour government in 1924, and was Prime Minister again from 1929 until 1935, 2, 412

MacDonnell Ranges are highlands in central Australia, in the southern part of the Northern Territory. The township of Alice Springs lies in the Ranges.

Picture: The Friendly Aborigine, 3, 202

Macduff. Name of a seaport on the Banffshire coast, Scotland. It is a fishery centre.

Mace. Originally a club having a metal head used as a weapon by knights in armour. It is now an emblem of office and is carried before the Lord Chancellor, the Speaker of the House of Commons, and Lord Mayors and Mayors.

Mace is the inner part of the husk of a nutmeg, ground up and used as a spice.

Macedon. Ancient name for Macedonia, from which came Alexander the Great, 2, 38

—under Alexander Macedon became a great empire and Greek culture was spread through the countries conquered by Alexander, 9, 20

See also *Alexander the Great*.

Macedonia. A hilly region in the Balkans, most of it lying in north-eastern Greece. As Macedon, it became a Roman province in 146 B.C., 2, 402; 4, 158

McGill University was begun in Montreal with property left by Mr. James

McGill. It is noted as a centre of study for medicine and engineering, 3, 184

Macgillycuddy Reeks is the name of a lofty mountain range in south-western Ireland. The highest peak of the range (and of Ireland) is Carrantuohill, which is 3,414 ft. high, 3, 144

Macgregor, W. Y. Famous Scottish artist, he belonged to the Glasgow School, 7, 105, 108

Machærodus. Name of an extinct animal of the cat family which had specially long teeth. It was about the size of a tiger.

Machine Tools are used in engineering shops. The lathe in its various forms is the best known and most widely used, 9, 345

Mackay is a port of Queensland, Australia, which serves as an outlet for the products of the sugar plantations and the mines, 3, 226

Mackensen, August von (1849 1945). German field-marshal who played a great part in the war of 1914-18 and remained one of the heroes of the German army afterwards, 2, 237

Mackenzie. Name of a great river of Canada. It rises in the Rocky Mountains and is known at first as the Athabasca. After flowing through the Great Slave Lake it becomes the Mackenzie.
The river is about 2,500 miles in length, 3, 166, 196

Mackenzie, Sir Alexander (1755–1820) A famous Canadian explorer, he emigrated to Canada when quite young, and took part in the fur trade. He made three great journeys, in one of which he travelled down the river named after him to the Arctic Ocean, 3, 158

Mackenzie, Sir Morell (1837–92). A famous English physician and throat specialist He founded the London Throat Hospital

Mackerel. Salt water fish found in many parts of the world. It varies in length from 14 to 18 in. and is recognised by its bluish-green back, barred with black, and its silvery underside. It migrates in a remarkable manner and is abundant off the Cornish coast from May till July, then reappears in September. Off the East coast the schools usually appear in May and June and again in September and October.
Colour Plate: British Salt Water Fishes, 8, *facing* 257

Mackerel Sky is a condition arising from cirro-cumulus clouds, 5, 9
Picture: 5, 8

Maclaren, Ian. See *Watson, John.*

MacLaurin, Colin (1698–1746). Scottish mathematician. His studies threw much light on the theory of the tides.

Macleod, Fiona. See *Sharp, William*

Maclise, Daniel (1806–70). Born in Cork of a Scottish family, he became a famous artist and carried out wall paintings at the House of Lords.
Pictures: The Trial of William Wallace, 2, 114
Caxton Showing Proofs to Edward IV, 2, 137
A Queen Reviews Her Soldiers, 2, 146
The Death of Nelson, 2, 200
Colour Plate: The Meeting of Wellington and Blücher, 2, *facing* 208

MacMurdo Sound is in Victoria Land in the Antarctic.
Photo-tone Supplement: Pack Ice and Penguins, 2, *between* 368 and 369

Macon. A large airship used by the U.S.A. Navy as an aircraft carrier, which crashed in the sea and was lost in 1935, 5, 188

Macquarie Street is a beautiful thoroughfare in Sydney, the capital of the state of New South Wales, Australia
Photo-tone Supplement Two Australian State Capitals, 3, *between* 240 and 241

MacRobertson Trophy Race took place in 1934. It was a race between aeroplanes flying from England to Australia It was won by Scott and Campbell Black in a de Havilland Comet. The second place was won by the Dutch pilots Parmentier and Moll in a Douglas Dakota, 5, 233

Macroom is a town of Cork, Eire. It is a centre of an agricultural district.

McTavish, Simon, was one of the pioneers of the North-West Company of Canada He was an explorer as well as a fur trader and in 17– he voyaged down the Mackenzie River to the Arctic, later exploring other regions in efforts to find a land route to the Pacific, 3, 158

Madagascar is a large island off the coast of south-east Africa belonging to the French. It grows silk and cotton and every kind of tropical fruit. Cattle breeding is important and there are large meat canneries The capital is Tananarive It was known to early Portuguese navigators, 2, 287; 4, 18

Madcap Hal. The nickname of Henry V prior to his accession to the English throne, 2, 129

Madder. A plant from the root of which a red dye, called by the same name, is extracted
Madder is used in preparing pigments of other colours -madder brown, madder purple and madder orange The dye has in recent years been largely replaced by dyes made from coal-tar

Madeira is the name given to a cluster of Portuguese islands in the Atlantic. The group is famous for its wine and fruit. The principal town is Funchal, 4, 140, 148
—Christopher Columbus lived for a time at Madeira, 2, 274

Madison, a noted industrial town, is capital of the State of Wisconsin, U.S.A.

Madonna means the Virgin Mary; a statue or picture of her. A picture of the Madonna usually shows her carrying the infant Christ.
Many such pictures were painted by medieval Italian artists.
Pictures: Madonna and Child, 7, 6
Madonna of the Magnificat, 7, 7
The Madonna del Grandusa, 7, 20
The Madonna of San Sisto, 7, 23

Madonna Lily. This is one of the best of bulbous lilies for planting in the garden.

Madras. (1) A province of the Union of India in southern peninsular India. (2) The chief town and seaport of that province. The city grew up round Fort St. George, being originally a trading settlement of the East India Company founded by Francis Day in 1640, 3, 320
—Madras taken by the French, 2, 184

Madrid is the capital of Spain and a focal point for Spanish roads and railways. It stands in the very heart of the Meseta and though warm in summer is often bitterly cold in the winter. It has industries, a university, and a particularly famous art gallery. Its population numbers nearly 1½ million, 4, 135

Madrigal. This is the Elizabethan form of part-song which originated in Italy and flourished in England in the "Golden Age" of music in the fifteenth and sixteenth centuries. It had usually four or five parts, each one of which was a melody or tune; or in technical terms it was "contrapuntal."

Madura is a district of Madras, India, where rice and cotton are grown.
Madura is the capital of the district noted for its famous Elephant Temple, 3, 316
Pictures The Elephant Temple at Madura, 3, 316
By the Golden Lily Pool, 3, 317

Mæcenas, a rich and powerful Roman. He was a friend of Virgil and gave his patronage to Horace, 7, 122

Maëlstrom is a word meaning great whirlpool and is the name given to such a whirlpool between two of the Lofoten Islands off the north-western coast of Norway. This was the Maelstrom about which Edgar Allan Poe wrote his famous story, 4, 44; 5, 32

Maes, Nicolas (1632–93). A pupil of Rembrandt he became one of the leading Dutch artists, 7, 52
Picture 7, 51

Maeterlinck, Maurice, Count (1862 1949). A Belgian poet and man of letters. Famous for his work *The Life of the Bee,* as well as more imaginative work such as *The Blue Bird* Received Nobel Prize 1911, 7, 254

Mafeking is a town and important railway junction in the north of the Cape Province of the Union of South Africa It was defended by Baden Powell during the famous seige, 1899–1900, 2, 226, 3, 294
Picture: 3, 293

Magadan is an important town of eastern Siberia where the mining of ore containing uranium is being developed, 4, 118

Magallanes is a province of Chili. The name is also given to the capital, on Magellan Strait, known formerly as Punta Arenas.

Magdeburg is a town of Germany on the River Elbe It is the old capital of the former Prussian province of Saxony and is an important industrial centre, 4, 84

Magellan, Ferdinand (about 1480–1521) The Portuguese navigator who discovered the strait that bears his name and the first European to navigate the Pacific Ocean, 2, 282 *et seq.*, 406

Pictures: Magellan sails from Seville, 2, 282
A Captain Put in Irons, 2, 283
The *Santiago* Runs Ashore, 2, 284
The Voyage Completed, 2, 285

Magellan Strait is a waterway between the mainland of South America and Tierra del Fuego. It was discovered by Ferdinand Magellan in 1520, 2, 284

Maggiore. Name of a lake on the borders of Italy and Switzerland. It is about forty miles in length and is noted for its beautiful scenery, 4, 64

Magician. One who is skilled in magic; an enchanter; a sorcerer. Magicians are mentioned several times in the Bible, especially Egyptian magicians. Among savage tribes the magician, or witch-doctor, has great power In this country the word now means merely a clever conjuror.

Magic Paint, Tiptoe's. A Tale for Nursery Folk, 5, 301

Maginot Line was a system of French fortifications along the German border named after its designer, 2, 248

Magistrate. A magistrate is a person appointed by the Crown to administer the law in the courts which deal with the less important cases of lawbreaking In serious cases the magistrate may commit a person for trial by a higher court—Quarter Sessions or Assizes The magistrates' court is usually a "bench" of three or more persons. They are also called "Justices of the Peace" and are unpaid. Stipendiary magistrates, who are paid, act instead of the justices at some police courts in London and other large cities, 9, 70, 337

Magna Carta. A charter forced from King John in 1215 and the greatest in English history forming the cornerstone of our liberty, 2, 104, 9, 49, 70
Pictures 2, 106, 404
The Writing of the Great Charter, 8, 201
Colour Plate: King John Sealing Magna Carta, 2, *facing* 101

Magnesium is a chemical element (symbol Mg). A lightweight white metal it burns with a dazzling light when heated Magnesium is only about half as heavy again as water
"Flash-light" photographs are taken by the light of burning magnesium powder. It forms part of several valuable alloys of aluminium and other metals.

Magnet. Any substance which has the power of attracting iron, steel, nickel and certain other substances. The well-known toy magnet is a horseshoe-shaped piece of steel which has been magnetised by stroking it with the pole point of a lodestone. A magnet is also made by winding an insulated wire round a steel or iron bar and then passing an electric current through the wire. The story of magnetism and how electromagnets are used is told in *The Romance of the Magnet*, 6, 149 *et seq.* (*p h.*)
Pictures: A Queen and the Magnet, 6, 149
Lines of Force in a Magnetic Field, 6, 150, 151
A Giant Electro-Magnet, 6, 152
Magnetism in the Hospital, 6, 153
An Electro-Magnetic Separator, 6, 154
Coil and Magnet, 6, 155

Magnetic Brakes, where magnets grip the running rails, are used on tramcars, 6, 152

Magnetic Field is the term applied to the space surrounding the poles throughout which a magnet's influence is felt.
Pictures: 6, 150–151

Magnetic Mines were one of the so-called "secret weapons" used by the enemy against British shipping in the Second World War. They had considerable success at first until British scientists devised a remedy in the degaussing girdle with which all ships were eventually fitted, 8, 22

Magnetic Storms have the power of changing direction in ships' compasses and affect both wireless and telegraphy. They are caused by sun-spots, 8, 122

Magnetite is a type of iron ore. Another name for it is loadstone or lodestone. Much of it comes to us from Sweden, 6, 42, 146

Magneto. An electric device for producing ignition sparks in the cylinders of a motor car. It is a combination of a generator and an induction coil. The armature, or revolving part, is geared to the engine and turns between the poles of a permanent magnet.
There are two windings of wire on the armature, one of large wire and one of small. The current in the large wire winding is interrupted at certain points during a revolution by a contact-breaker. These interruptions set up very intense currents in the small wire or secondary coil, which are directed to the sparking plugs in rotation by a revolving switch called a distributor.

Magnitogorsk is an important iron and steel manufacturing town in the Ural mountains of Russia, 4, 117, 118
Picture 4, 117

Magot. A tailless, baboon-like monkey known as the Gibraltar ape.

Magpie. A long-tailed black and white bird, usually found near woods Noted for its pilfering habits
Special Colour Supplement: British Wild Birds, 1, *between* 160 and 161 (Plate 1)

Magyar. A Magyar is a native of Hungary. This central European state is thus the home of the Magyar people, 4, 90, 93

Mahaila is the name of a type of boat used in Iraq. It has a tall, triangular sail and eyes at the prow, 4, 202

Mahé is the chief island in the Seychelles group in the Indian Ocean, 3, 388
Picture 3, 386

Mahean Bay is a beautiful inlet on the coast of Trinidad, in the British West Indies.
Picture 3, 395

Mahogany. Name of a forest tree which grows chiefly in South America Other types come from the Spanish and Australian cedars, as well as the Indian Redwood. The wood is much used for the making of furniture. Probably the world's finest mahogany comes from British Honduras, 3, 399

Mahomet. See *Mahommed*

Mahommed was the founder of Mahommedanism, one of the great religions of the world. The followers of the religion are known as Mahommedans, Mohammedans, Moslems, or Muslims. Their sacred book, the Koran, contains the revelations made by Allah to Mahommed who died in the year A.D. 632 after a life of more than sixty years. His name is also spelt Mahomet, 2, 404

Mala, a goddess of ancient times and daughter of Atlas (*q v*) after whom our month of May is named.
Picture 2, 119

Maibaum is a German word meaning, literally, "may-tree," but being translated best by our English word "maypole." German Maypoles are often carved with fantastic designs, 4, 84

Maidan is the name of a wide plain at Calcutta where there is a racecourse and sports grounds, 3, 347

Maidenhair Fern. A fern which has its fronds finely divided and thin, hair-like stalks.

Maidenhair Tree. Name given to the Ginkgo, which has foliage like the maidenhair fern

Maidenhead, Berkshire A residential town and Thames-side resort. The corporation dates from Elizabeth's reign, while the bridge was completed in 1772. It is famous for Boulter's Lock

Maid of Norway. Name given to Margaret, a Norwegian Princess to whom Edward I wished to marry his son the Prince of Wales
She died on a voyage to England, 2, 113

Maid of Orleans. Term applied to *Joan of Arc* (*q.v.*)

Maids of Honour are ladies of the Queen's household, who attend daily, in rotation, on the Queen
They have the title of "Honourable"

Maidstone is the county town of Kent, standing on the River Medway. It is a centre of the hop business, but has many other industries The town dates back to Anglo-Saxon times
Picture An Automatic Lamp-lighter, 6, 234

Mail Coach. A vehicle usually drawn by four horses for the conveyance of the mails. The first mail coaches ran between London and Bristol in 1784, 6, 278
Picture: 6, 285

Main is a river of Germany which empties into the Rhine. It is linked with the Danube by Ludwig's Canal, 4, 70, 90

Main Island, Bermuda. See *Great Bermuda.*

Main, Spanish. See *Spanish Main.*

Maine is one of the New England States of the U.S.A. It produces timber, wood pulp, paper, fish and most agricultural crops.
The capital is Augusta.
Pictorial Map: 4, 291

Maine. A United States battleship which was mysteriously destroyed in Havana harbour. This event marked the opening of the Spanish-American war which began in 1898, a month after the destruction of the *Maine.*
Picture: 4, 309

TENS AND TENTHS

The Metric System of Weights and Measures was started by the French in 1801. It is arranged decimally, each Weight or Measure being 10 times the next below it.

The unit of LENGTH *is a Metre* = 39·3701 inches

The unit of VOLUME *is a Litre* = 1·76 PINT

The unit of WEIGHT *is a Gram* = 0·56438 DRAM

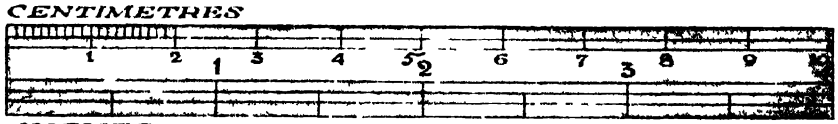
Each unit has multiples and sub-multiples

These are 10, 100, 1000 times the unit and $\frac{1}{10}, \frac{1}{100}, \frac{1}{1000}$ *of the unit*

Deca = 10; Hecto, 100; Kilo, 1000; Myria, 10,000;

Deci = $\frac{1}{10}$ *; Centi.* $\frac{1}{100}$*; Milli,* $\frac{1}{1000}$*;*

CENTIMETRES



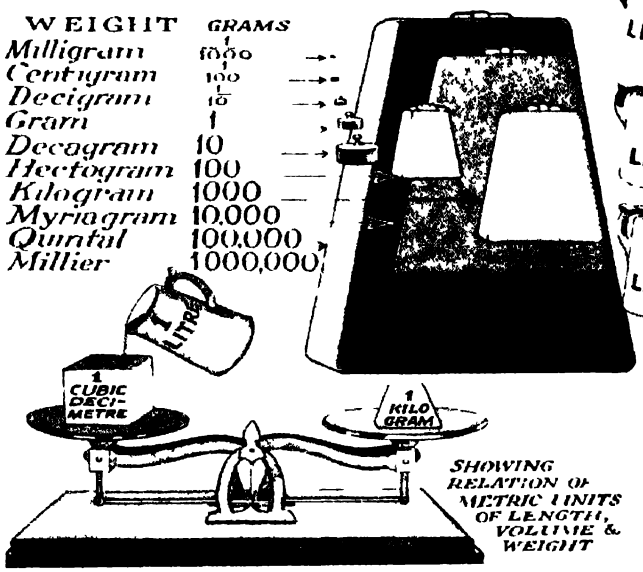
INCHES

METRIC and ENGLISH SCALES COMPARED

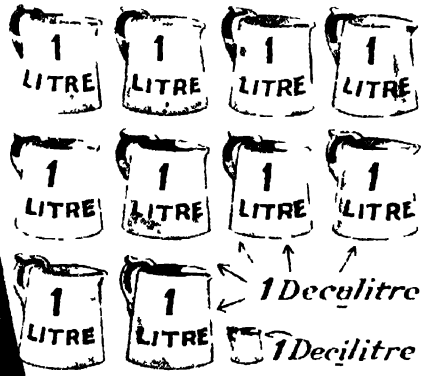
LENGTH	METRE	
Millimetre	$\frac{1}{1000}$	= 0·0394 *ins*
Centimetre	$\frac{1}{100}$	= 0·3937 *ins.*
Decimetre	$\frac{1}{10}$	= 3·9371 *ins.*
Metre	1	= 39·3701 *ins*
Decametre	10	= 10 *yds* 2 *ft* 9·7079 *ins*
Hectometre	100	= 109 *yds.* 1 *ft.* 1·079 *ins*
Kilometre	1000	= 1093 *yds* 1 *ft.* 10·79 *ins*
Myriametre	10,000	= 6 *miles*, 376 *yds* 11·9 *ins*

VOLUME	CUBIC METRE	
Centilitre $\frac{1}{100}$ *litre*	=	$\frac{1}{100,000}$
Decilitre $\frac{1}{10}$ *"*	=	$\frac{1}{10,000}$
Litre	=	$\frac{1}{1000}$
Decalitre 10 *"*	=	$\frac{1}{100}$
Hectolitre 100 *"*	=	$\frac{1}{10}$
Kilolitre 1000 *"*	=	1

WEIGHT	GRAMS
Milligram	$\frac{1}{1000}$
Centigram	$\frac{1}{100}$
Decigram	$\frac{1}{10}$
Gram	1
Decagram	10
Hectogram	100
Kilogram	1000
Myriagram	10,000
Quintal	100,000
Millier	1000,000



SHOWING RELATION OF METRIC UNITS OF LENGTH, VOLUME & WEIGHT



SURFACE	SQ. METRES	SQ. YDS.
Centiare	1 =	1·196
Are	100 =	119·6033
Decare	1000 =	1196·0333
Hectare	10,000 =	2·47 acres

1 CENTIARE (1·196 SQ. YD.)
1 ARE

Specially drawn for this work

Children living in countries where the *metric system* (see p. 242) of weights and measures is used have a much simpler task than English children in learning tables and doing arithmetical sums into which quantities and values enter. How much simpler reckoning of money would be if ten pence made a shilling and ten shillings a pound! This illustration shows very clearly how in the metric tables of length, weight and volume the various quantities go up by tens and down by tenths from the unit. Also at the bottom it explains in a simple way how length, weight and volume are linked together.

Mainz is a town of Germany, on the River Rhine. It is a centre of printing and has many other industries. Gutenberg, inventor of printing from movable type, was born here and set up his first press in the town, 4, 70

Maissoneuve, Paul, Sieur de. He founded the settlement of Mont Real in Canada in 1642. From this beginning the great city of Montreal rose, 3, 184
Picture: 3, 184

Maitland is a town of New South Wales, Australia, on the northern edge of the New South Wales Coal Basin, 3, 236

Maize, or Indian corn, a cereal food grown in the tropics, one of the chief sources of starch, and a kind of sugar known as glucose, 1, 307
See *Cereals*

Maize "Mortar." A simple instrument used by the Bantu people of South Africa for pounding maize.
Pictures: Native Women at a Domestic Task, 3, 278
Using a Maize "Mortar," 3, 290

Majorca is the largest of the Balearic Islands, a group in the Mediterranean belonging to Spain. On this island is the ancient town of Palma, founded in 121 B.C. by the Romans. The island is called *Mollorca* by the Spaniards, 4, 137
Picture: 4, 133

Makalangas are African tribesmen found in Southern Rhodesia, 3, 301

Make Mine Music. The name of a colour film produced by Walt Disney which portrays Sonia the Duck, Sasha the Bird, Peter, the bad Wolf, and other fascinating characters.
Picture: 9, 292

Makerere College is at Kampala, in the Uganda Protectorate and is a training centre for Africans, 3, 374

Makota, Pangeran, was governor of Sarawak before Sir James Brooke, 2, 327

Makwar Dam is one of the dams on the Blue Nile. It was built near Sennar in 1925, 4, 378

Malabar is the name given to the coastal strip of south-west peninsular India. The chief port of the Malabar Coast is Calicut, 2, 291

Malacara is the name of the finest brand of coffee produced in the Central American republic of El Salvador, 4, 303

Malacca. A state of the Federation of Malaya. Its capital is a town of the same name, 2, 326; 3, 404

Malacca, Straits of. See *Straits of Malacca.*

Malady means a disease of body or mind; a serious illness. Measles, scarlet fever, mumps and influenza are common maladies.

Malaga is one of the provinces of Spain. It gives its name to the provincial capital which is a wine and fruit-exporting centre on the Mediterranean, 4, 136

Malagash Salt Mine, in Nova Scotia, constitutes the largest salt deposits in the British Commonwealth. These deposits are said to be 27 million years old.
Picture: 3, 190

Malakand is the name of a great pass in the North-West Frontier Province of Pakistan, 3, 340

Malapterus. Name for the *Electric Catfish* (*q.v.*).

Malaren. A lake of Sweden containing many islands. Upon these Stockholm, the Swedish capital, is built, 4, 45
Pictures: 4, 43

Malaria. A kind of fever caused by the bite of the anopheles mosquito and most prevalent in hot, swampy districts.
The disease, also called ague and intermittent fever, was formerly thought to be caused by poisonous mists rising from low-lying wet ground; but its true cause was discovered by Dr. Ross (afterwards Sir Ronald Ross (*q.v.*)) of the Indian Medical Service.

Malatya is a town in Turkey and is one of her textile manufacturing centres. The town has a population of some 41,000, 4, 159

Malay is the name given to the people native to Malaya. The Malays are most numerous in the population of Malaya (which also includes Chinese, Indians, and others). Their religion, for the most part, is Mohammedan, 2, 328, 402
Pictures: Going to Fetch Water, 2, 327

Malaya, Federation of. This occupies the whole of the Malay peninsula and consists of the Malay states of that peninsula, together with Penang and Malacca. Singapore (*q.v.*) has become a separate colony.
The capital of the Federation is Kuala Lumpur. The total population of the Federation including races other than the Malays is nearly five million. Rubber, tin, rice, coconuts, and oil palms constitute the main industries See *Malaya, Land of Rubber and Tin,* 3, 401; 4, 374
—captured by the Japanese, 2, 252
Pictures: A Malayan Rubber Planter's Home, 4, 364
Malayan Rubber for World Markets, 4, 365

Malay Peninsula is the name given to the long, narrow strip of land, running southwards for about 900 miles from the Gulf of Siam, 3, 401

Malcolm was the name of numerous kings of Scotland, of whom the most important was Malcolm III who was crowned at Scone, in 1057.

Malcolm II was a King of Scotland who died 1022. He is said to have been slain in battle near Glamis, 2, 244

Malden is a town and port of Essex, standing on the River Blackwater. It has oyster beds. It was the scene of a battle against invading Norsemen in 991, and it has an ancient grammar school.

Maldive Islands, 400 miles west of Ceylon, are a group of coral atolls, about 200 of which are inhabited, with a total population of over 93,000. Coconut palms, millet, fruit and edible nuts are grown. The inhabitants are excellent sailors and traders, with a high standard of civilisation. After being ruled by sultans for over eight centuries, the islands became a republic on Jan. 1st, 1953. Britain retains the responsibility for the defence of the islands. The capital is Malé on King's Island.

Malecon is a spacious thoroughfare in Havana, the capital of Cuba.
Picture: 4, 309

Malenkov, Georgi Maximilianovitch (*b.* 1902), began his political career as private secretary to Marshal Stalin and later became Deputy Chairman of the Council of Ministers. On the death of Marshal Stalin in March, 1953, he became the Prime Minister and leader of the Soviet Union (Russia), 9, 47

Malindi is a seaport of Kenya, just north of Mombasa, 2, 290
Picture: 2, 293

Malines is an important manufacturing city of Belgium just south of Antwerp. It was a noted medieval trading city and is still famous for its lace, 4, 19, 24

Mallaig is a fishing village and port on the west coast of Inverness, Scotland. It is one of the centres of the herring industry.
Pictures: Packing Herrings at the Quayside, 8, 76
Shipping Herrings at Mallaig, 8, 78
Round Our Coasts, 8, 102

Mallard is a variety of *Wild Duck* (*q.v.*). The name mallard was used originally for the masculine bird but is now applied to both sexes.

Malleable means capable of being flattened out by hammering or rolling without breaking. Gold is the most malleable of the metals under the hammer, silver comes next and then follow in order aluminium, copper, tin, platinum, lead, zinc, iron and nickel.

Mallory, George Leigh. One of the heroes who gave their lives in the assault on Mount Everest, 2, 389, 392; 3, 348

Mallow. Name often given to the tall hardy annual plant *Lavatera* (*q.v.*).

Mallow, Common. See *Common Mallow.*

Malmesbury is a town of Wiltshire standing on the River Avon, famous for its ancient church which was part of a great Abbey.

Malmesbury, William of. See *William of Malmesbury.*

Malmo. A town and seaport of Sweden. It is a place of many industries.

Maloe. Place in the south of Sweden where there is marked land movement, 1, 3

Maloka. A large communal house built by the primitive peoples of the Amazon, 4, 316

Malory, Sir Thomas (died 1471). He wrote *Morte d'Arthur,* regarded as the most important prose literary work before Elizabethan days. It was first printed by Caxton in 1485.

Malplaquet, Battle of (1709). This victory was the last military engagement of the Duke of Marlborough. Malplaquet is a village in France near the Belgian frontier and not far from Mons, 2, 177, 408

Malta is a British Island in the Mediterranean. It is an important station of the Royal Navy and is noted for its lace. It played an important part in the late World War and was termed "the unsinkable aircraft carrier" by

the enemy by whom it was heavily bombed. The island was awarded the George Cross for the courage of its inhabitants. The capital is Valletta, 3, 387
—acquired by Britain under the Treaty of Vienna (1815), 2, 208
Pictures: 3, 389
Colour Plate: In the Grand Harbour at Valletta, Malta, 3, *facing* 384
Malton. A town of the North Riding of Yorkshire. It stands on the River Derwent. It is a centre for horse-breeding and has several industries.
Malud Bey was second-in-command to Lawrence of Arabia, 2, 386
Malvern is a health and residential centre of Worcestershire noted for its springs.
Malya. A new centre that is being built out of the virgin bush in the Sukumaland region of British East Africa, 3, 375
Mamba. A bright green and very poisonous snake; it is found in Africa, 1, 144
Mamelukes were the former mounted soldiery of Egypt, consisting originally of Circassian slaves and dating back to the thirteenth century and eventually attaining considerable power. They were massacred or expelled by Mehemet Ali in 1811.
Mammals. The highest class in the animal kingdom Became dominant after the Age of Reptiles, 1, 31
Questions and Answers concerning mammals, 9, 362
Mammoth, an animal of the elephant type, its body covered with hair, 1, 11, 32
Pictures: As Seen in a Museum, 1, 35
Skull Found at Ilford, 1, 32
Colour Plate 1, *facing* 37
Mammy Chair is the name given to the appliance by means of which passengers are lowered from liners into surf-boats off the west coast of Africa, 3, 381
Managua. (1) A lake in Nicaragua
(2) The capital of Nicaragua which stands at the southern end of that lake. It is virtually a new city having been rebuilt after the terrible earthquake of 1931, 4, 304
Manakin. A bird of vivid plumage found in South America.
Manaos is a city of Brazil and an important shipping centre on the River Negro, 4, 314, 316
Manatee. An animal of the sea, sometimes known as the sea-cow. It is seal-like in form and about 8 ft. in length.
Found off certain coasts of Africa and America.
Manche is the name given to a district of north-western France. It is a great fruit-growing area.
Manchester. City of Lancashire and the fifth largest in Britain is the centre of the cotton trade and industry. It is a port by reason of the Manchester Ship Canal and its engineering and chemical industries are of great importance. Its university and grammar school have high reputations and the city is an important cultural centre, 3, 84
—Manchester's Water Supply, 6, 248 *et seq.*
Picture: Manchester, the Cotton Capital, 3, 85
Manchester and Liverpool Railway, completed in 1830, was our first passenger steam railroad, 5, 115
Pictures: 5, 115
Manchester Ship Canal makes it possible for large, ocean-going ships to enter the city. The canal is thirty-five and a half miles in length and starts from the River Mersey at Eastham Locks, continuing to Salford, the Port of Manchester.
The canal was opened in 1894, 3, 76 and 84; 5, 53
Picture: 3, 85
Manchu Dynasty. The Manchus ruled China from 1644 until 1911 when the last Manchu emperor abdicated. They originated outside the Great Wall and gained their empire by conquest, 2, 412
Manchuria forms what is known as one of the "Outer Territories" of China and consists of three provinces which have since been redivided into nine provinces. It is primarily an agricultural region, but has important cities such as Mukden and Harbin and the ports of Dairen and Port Arthur. The latter is a naval base shared jointly with Soviet Russia, 4, 231, 376
Manchurian Eared-Pheasant. A bird of gorgeous plumage. It has twenty-two tail feathers each nearly 2 ft in length.
Picture 1, 169
Manchus is the name given to the people of Manchuria, in North China. The Manchu race ruled in China for about 300 years.
Mandalay is an ancient city of Burma and was once the capital of that country It stands on the River Irrawaddy and is linked by railway to Rangoon, 4, 222
Mandarin is the name given to various officials in China. The mandarins are of different ranks or grades and wear badges, buttons or special clothing accordingly.
Mandate. An order given by authority; a commission Tanganyika Territory in East Africa is administered by Britain under a mandate originally given by the League of Nations whose authority is now vested in UNO, 9, 329
M. & B. 693. A medical drug named after the manufacturing chemists whose research workers discovered the value of the Sulpha drugs particularly in cases of pneumonia and similar diseases, 7, 398
Mandeville, Sir John, was the author of a famous book of travels written in French or Latin and translated into English about 1364, 9, 324
Mandhlakazi. The name of a tribe of the Zulus
Picture: 3, 308
Mandible. Either part of a bird's beak; the lower jaw of an animal; one of the biting organs of an insect.
Mandoline. This instrument is the successor of the lute, but is smaller. It is a stringed instrument played by plucking the strings with a plectrum or pick. The best-known type, the Neapolitan, is tuned like the violin.
Mandrill. Member of the baboon family. Its face has purple and blue markings, 1, 102
Man-Eater. Term applied to an old tiger that has become a hunter of human beings, 1, 48
Manet, Edouard (1832–83). Famous French artist. He led the movement in French painting known as Naturalism, 4, 16
Mangabey Monkey. A small docile monkey—a native of the Congo district of Africa.
Photo-tone Supplement: Monkeys and Their Ways, 1, *between* 96 and 97
Mangaia is one of the Cook Islands, belonging to New Zealand
Mangamhoe. The name of a lake in the North Island of New Zealand. On its shores stands Mount Egmont.
Photo-tone Supplement: From Volcanoes to the Southern Alps, 3, *between* 256 and 257
Manganese is a hard greyish white metal, one of the elements (symbol Mn). It occurs in Nature combined with oxygen, as black oxide of manganese. It is mixed with iron in the making of ordinary steel and special steels; and in certain alloys of copper and nickel, 6, 55, 59
Mango. An evergreen tree found in the East Indies. The fruit is often used in chutney and preserves, 3, 332
Mangolds. A root crop grown on farms for the feeding of livestock. Also known as *Mangel* and as *Mangel Wurzel,* 6, 391
Manhattan is an island at the mouth of the Hudson River It forms part of New York City, 4, 268
Colour Plate: The Ocean Voyager's First Glimpse of the New World Today, 4, *facing* 292
Manhole. An opening in a boiler or sewer through which a man can enter to inspect and clean it.
Manila is the capital of the Republic of the Philippines. It stands on the island of Luzon and is a big sea and air port. It was severely damaged during the Second World War and a new capital, to be called Quezon City, is being built north-east of Manila, 2, 320; 4, 212
Pictures: In the Philippine Republic, 4, 209
A Church in Manila, 4, 211
The Statue of Legaspi, 4, 211
Manilius. Name of an astronomer who lived some 2,000 years ago. He believed the earth to be round, 8, 132
Man in the Iron Mask. An unidentified State prisoner in France from 1698 to 1703 He wore a mask of iron or, according to some accounts, black velvet. Voltaire and Dumas wrote about him, saying that he was the brother of King Louis XIV, but this is very doubtful and the mystery has never been solved.
Picture: 4, 17
Man, Isle of. See *Isle of Man.*
Manitoba is one of the prairie provinces of Canada between Hudson Bay and Saskatchewan. It is a great wheat-growing district.
The capital is Winnipeg, 3, 175
Pictures Inspecting His Catch, 3, 165
Manly is the name of a popular bathing beach of Sydney, New South Wales, Australia, 3, 231
Manmad is a town and railway junction in the province of Bombay in the Dominion of India. From here it is possible to go by narrow gauge rail-

way to Aurangabad, 3, 325
Mann, Kathleen, is a well-known British artist and has painted since childhood, 7, 118
Manners, Good. The importance of politeness and courtesy in our dealings with others has been recognised since civilisation began, and every age and every country has had its code of good manners. See *A Guide to Good Manners for Boys and Girls*, 9, 181 *et seq.*
Mannheim is a large manufacturing town of Baden, in Germany, 4, 70
Manning, Thomas, was the only Englishman who had ever succeeded in reaching Lhasa, the capital of Tibet, before 1904. Manning penetrated to the city in 1811, 9, 312
Manoel I, King of Portugal, 1495–1521. Though he supported Vasco da Gama, he refused assistance to Ferdinand Magellan, 2, 282, 289
Manoel II (1889–1932). The last King of Portugal. He gave up his throne in 1910, spending his last days in Portugal at the Pena Palace at Cintra, and then came to England where he afterwards resided.
Picture 4, 137
Manœuvre. A skilful plan; especially one for moving troops in the field or warships at sea.
Man o' War Bird. See *Frigate Bird.*
Mansard Roof. A roof having two slopes, which would form a triangle with a straight line running from the pitch to the eaves. Its purpose is to give more room for attics.
Manse. A term used, particularly in Scotland, for the house in which the minister of religion lives.
Mansfield is a Nottinghamshire manufacturing and coal-mining town Boots, and woollen and cotton hosiery are also made there, 3, 73
Manson, Sir Patrick (1844–1922). He closely studied tropical diseases and the part played by mosquitoes in spreading them.
Founded schools of tropical medicine in London and Liverpool.
Mantegna, Andrea (1431–1506). Famous Italian painter, he did important work at Padua and at Rome, 7, 22
Manthe Doog is the name of the apparition which is said to haunt the guardroom of Peel Castle, Isle of Man, 3, 92
Mantilla. A Spanish word meaning a short mantle, or veil. *Mantillas* are an essential part of the traditional dress of the women of Spain. They are still worn on special occasions and are often very beautifully made
Mantis is the name of an insect found in the tropics. It stands with its fore-legs raised when waiting for its prey and is sometimes called the "praying insect."
Mantle-Wearers. Name given to molluscs or shellfish, 1, 227
Manual means belonging to the hand; done or worked by the hands. A juggler who keeps a number of things in the air at the same time has great manual dexterity.
Digging, carpentering and bricklaying are some of the many manual occupations. A manual crane is one turned by hand, as opposed to a power-driven crane.
Manukau is the name of a harbour of North Island, New Zealand, on which Auckland stands. Auckland is actually on the isthmus formed by Manukau and Waitemata harbours, 3, 265
Manuscript. A document or literary work written by hand; hand-writing as opposed to print. The oldest manuscript known is an Egyptian one written some 3,400 years ago.
Before the invention of printing all books were in manuscript, that is, handwritten characters. Nowadays, an author usually prepares a book in manuscript and has it copied in typescript on a typewriter before it goes to the printer. The word is commonly abbreviated to MS, plural MSS.
Pictures A Scholar of the Middle Ages, 8, 189
Before the Printing Press, 8, 195
The Writing of the Great Charter, 8, 201
Papyrus on Which the Ancient Egyptians Wrote, 8, 207
Manyalta. These are camps of the Masai people living in Kenya colony, 3, 372
Maoris are the aboriginals of New Zealand They were found there when Captain Cook came, but are of Polynesian origin. There are now more than 109,000 of them, most of these living in North Island They have their own lands, own schools, and own representatives in the Dominion Parliament, 3, 250, 260
Pictures: A Maori War Dance, 3, 249
The "Hongi," 3, 250
Maori Games and Dances, 3, 251
Cooked in Hot Water, 3, 258
Photo-tone Supplement New Zealand Scenes, 3, *between* 256 and 257
Mao Tse-tung is one of the chief Communist leaders in China, 4, 231
Maple. There are many varieties of maple, the large sorts yielding valuable timber. Because of their rich autumn tints some maples are popular garden shrubs. (*p h.*)
—its seeds have bird shaped wings.
Picture. 1, 377
See also *Sycamore.*
Maps. The ancient Egyptians, followed by the Greeks, made maps of the world as they knew it, Ptolemy, a Greek living in Egypt, who was one of the earliest geographers, drew maps with a network of parallels and meridians. The science was lost to some extent until the voyages of the fifteenth century made better maps a necessity, and about 1492 Behaim constructed one of the earliest globes. Mercator devised a system which made it possible to show the world on a flat sheet of paper, and from Mercator's chart of 1569 all our maps have been based by using the Mercator system of projection.
The Air Age has brought new problems for the map-maker and among other systems the Azimuthal Equidistant Projection is used. The map in this case is based on a particular centre from which the aircraft fly and shows the shortest and most direct flying routes.
Pictures and Maps: The Four Voyages of Columbus, 2, 277
Meteorological Maps, 5, 12, 13
Air Routes Maps, 10, 45
Pictorial Maps: Australia, 3, 242–3; U.S.A., 4, 290–1. See also *Canada, India, South Africa,* and *New Zealand* in this volume.
Special Colour Supplement : Geographical Terms, 9, *between* 176 and 177 (Plate 4)
Atlas. End of Vol 10
Maps and Plans, with simple lessons for young folk on how to draw them, 9, 173 *et seq.*
Marabou Stork. A bird of tropical Africa whose beak meets closely at the base and lips, leaving the centre open for its prey.
Picture. 1, 178
Maracaibo is a city, and also the name of a lake and gulf, in the South American republic of Venezuela. They form the chief centre of the oil industry, 4, 330
Pictures 4, 328, 6, 309
Marathon is a type of aeroplane used for short range transport.
Picture and Description: 5, 234
Marathon, Battle of (490 B.C.). The Army of Darius, King of Persia, was defeated by a much smaller army of Greeks, 2, 21
—the news of this victory was taken by a runner to Athens and the name Marathon has been given to a race still run during Olympic Games, 9, 402
Marathon Bay, situated about twenty miles north-east of Athens in the Ægean Sea, 2, 21
Picture 2, 21
Marazion is a town and fishing port of Cornwall. It stands on Mount's Bay and is a holiday centre
March is a town of Cambridgeshire. It stands on the River Nen
March Day, A. Poem by William Wordsworth, 9, 88
Marches was the name given in olden times to border lands between England and Wales Holders of these lands were called Lords Marcher, 3, 71
March, Ides of. See *Ides of March.*
Marconi, Guglielmo (1874–1937) Born at Bologna of mixed Italian and Irish parentage. He made wireless possible by applying the principles and discoveries of Faraday, Clerk-Maxwell, Hertz and others. He received the Nobel Prize for Physics in 1909 The first wireless signals between this country and America were exchanged in 1901, and commercial messages transmitted in 1903, 2, 216, 225; 6, 204, 218
Marconi House. An early broadcasting centre in London, 2, 240
Picture: 2, 234
Marco Polo. See *Polo, Marco.*
Marcus Aurelius (A.D. 121–180). He became Emperor of Rome in A.D. 161 ruling jointly with his "brother" Lucius He became well-known for his philosophical writings "Meditations," 2, 403
Special Colour Supplement: In Ancient Rome, 7, *between* 336 and 337
Mardonius, a Persian general who was slain by the Greeks 479 B.C., 2, 33
Marengo, Battle of (1800). At this battle in northern Italy, Napoleon defeated the Austrians, 2, 410
Mare's Tail is a name given to cirrus clouds, 5, 8

Mare, Walter De La. See *De La Mare, Walter.*

Margaret, Princess. Second daughter of King George VI, was born at Glamis in 1930 and christened Margaret Rose, **2**, 264
Picture: **2**, 243

Margate. Popular Kentish seaside resort within easy distance of the North Foreland, **3**, 36

Marl. In a gardening sense, sticky yellowish soil. A form of clay, **8**, 271

Marianas. Name of a group of islands in the north-west Pacific, once known as the Ladrones or Thieves' Islands. Played an important part in the war against Japan, and are now under U.S. occupation.

Maria Theresa (1717–80), Archduchess of Austria, Queen of Hungary and Bohemia, and wife of the Holy Roman Emperor, Francis I. She succeeded her father, the Emperor Charles VI, as ruler of the Hapsburg domains. Her accession was the signal for various other rulers to claim part of her territories, and with the seizure of Silesia by King Frederick the Great of Prussia, the War of the Austrian Succession began. It lasted from 1740 until 1748 and was a war in which Britain took part, **4**, 76

Maria-Theresienstrasse is one of the main thoroughfares of the Austrian town of Innsbruck.
Picture: **5**, 66

Maribunta. A wasp found in the forests of South America. It stings almost as badly as a hornet, **1**, 366

Marie Antoinette (1755–93), Queen of France. She was the wife of King Louis XVI and was guillotined with him during the French Revolution, **2**, 196

Marie Celeste. Name of a small ship found abandoned in calm seas in 1872. No trace of her crew and no reason for her abandonment has ever been discovered, **8**, 51
Picture: Mystery of the *Marie Celeste*, **8**, 51

Marienkirche is a church in the German town of Lübeck. It was built in the thirteenth century and was one of the first buildings to be built with bricks.
Picture: **4**, 72

Marigold. One of the most popular half-hardy annual plants. There are French and African varieties, **8**, 278. See also *Marsh Marigold* and *Corn Marigold*

Marine means belonging to the sea, found or formed in the sea; inhabiting the ocean. A marine steam engine is one used on the sea, that is, in a ship.

Mariner's Compass. See *Compass*

Marines, Royal. A force originally raised in 1664 as a military body. Since 1755 they have been under the control of the Admiralty, and serve mostly aboard ship. Their nickname is the "Jollies," **9**, 374
Picture: The "Jollies" Man the Ship's Guns, **8**, 16

Marionettes are puppets moved by strings used when presenting plays, such as Punch and Judy, as puppet shows.

Mariposa Grove. Name of a forest in California famous for its giant Redwood trees.
Picture: **1**, 327

Maris, Matthew (1835–1917). A modern Dutch artist, he was one of three painter brothers. He lived the life of a hermit in London.
Picture: **7**, 54

Maritza is the name of a Bulgarian river which flows through the plain of Rumelia, **4**, 97

Mark Antony (Marcus Antonius). (83–30 B.C.). Roman soldier and statesman, who served under Julius Cæsar in Gaul. After Cæsar's assassination he was one of a triumvirate which took charge in Rome and later defeated Brutus and Cassius at Philippi (42 B.C.). Antony formed an alliance with Cleopatra, Queen of Egypt, but at Actium Octavian defeated Antony in a sea battle and Antony fled back to Egypt where later he took his own life, **2**, 78

Marken. An island of the stretch of water in Holland formerly known as the Zuyder Zee which has disappeared as more and more land has been reclaimed from the sea and is now known as Ijssel or Yssel Lake, **4**, 32
Colour Plate: In the Harbour of Marken Island, **4**, *facing* 60

Market. A place where goods are sold. In the Middle Ages the right to hold a market was granted by the King or a governing lord. Towns were granted charters giving them this privilege. These markets were usually held in open squares on certain days. To a great extent these markets are continued in the same towns and on the same days as fixed long years ago, but are now generally controlled by the local councils who have the right to buy the privileges granted in the past to important families. The markets are a source of revenue to those who own them.

Market Harborough. A market town of Leicestershire, well known as a hunting centre. Nearby the village of Naseby where the battle of that name was fought.

Markets of London. Most of London's markets deal mainly in one class of goods as, for instance, Billingsgate deals in fish, Smithfield in meat, Covent Garden in fruit, vegetables and flowers, **9**, 404

Markham, Sir Clements R. (1830–1916). In the course of a journey through Peru he realised the value of the cinchona tree for the production of quinine as a medicine. He started plantations of the cinchona in India, **1**, 311

Markhoor is the name of a large goat found in India and Cashmere. It has enormous horns.

Markt-Scheuen is the name given to the market boats as used on the canals of Holland, **4**, 30

Mark Twain. Pen-name of *S. L. Clemens* (*q.v.*)

Marlborough Downs. These are a part of the chalk hills radiating from Salisbury Plain. Marlborough, famous for its public school, lies within their folds. They are also known as the White Horse Hills, **3**, 22

Marlborough, Duke of. (1650–1722). See *Churchill, John.*

Marlow. A small Buckinghamshire town on the banks of the Thames noted for its annual regatta in which rowing takes the leading part, **3**, 25

Marlowe, Christopher (1564–93). An English dramatist whose many plays include *Doctor Faustus* and *The Jew of Malta*, **2**, 154

Marmara, Sea of. This sheet of water separates south-eastern Europe from Asia Minor. It is about 175 miles in length and some 50 miles in width. Also spelt *Marmora*.
One of its islands is named Marmara.

Marmoset. A long-tailed monkey of the New World. The animal is about the size of a squirrel, **1**, 102

Marmot. Name of a squirrel-like animal found both in Europe and America. In colour it is yellowish brown. It lives in a burrow.

Marmot, Alpine. See *Alpine Marmot*

Marne is the name of one of the departments of France, famous for its wines. Châlon and Epernay are two of its towns.

Marne. An important river of northern France which flows into the Seine. It was the scene of a great battle at the outset of the war of 1914–18, **2**, 235

Marple is a town of Cheshire and is interested in the cotton trade. It is about 12 miles from Manchester, of which it is to some extent a residential suburb.

Marquis. (1) An English title first bestowed in the fourteenth century. A marquis ranks next below a duke in our nobility.
(2) Name of a famous variety of wheat which ripens specially early, **1**, 382

Marryat, Frederick (1792–1848). A British writer and sailor. He left the sea to turn novelist and wrote the well-known *Midshipman Easy*, and other adventure stories which are still widely read, **7**, 210

Mars. In the legends of Ancient Rome was the god of war, **2**, 50; **5**, 366
Picture: Mars, the Great Storm Cloud, **5**, 367

Mars. One of the nine planets of the Solar System, is fourth in order of distance from the Sun. It is 4,215 miles in diameter; completes a revolution of the Sun in 687 days, and rotates on its axis in 24 hours 37 minutes. It has "polar caps" which may be vast fields of ice and snow. A special feature of Mars is the existence of dark markings thought to be canals, giving rise to the question whether Mars is inhabited. See *Planets, Comets and Meteors*, **8**, 139 *et seq*
Pictures: Our Neighbours, **8**, 141
Ice and Snow at the Poles of Mars, **8**, 144
Changes in the South Polar Cap, **8**, 145
Comparative Sizes of the Earth and Mars, **8**, 147
The "Canals" of Mars, **8**, 149
Mars through the Telescope, **8**, 150, 151
A Rare and Beautiful Sight, **8**, 155

Marsala is a seaport of the island of Sicily. Its name is given to a well-known wine.

Marsden, Samuel, led a group of

English missionaries who landed in New Zealand in 1814 to spread peace and Christianity among the Maoris, 3, 252

Marseillaise, The. The famous war song and national anthem of the French Republic. Volunteers from Marseilles first sang it in Paris, hence its present name. It was composed in 1792 by Rouget de Lisle, 4, 10

Marseilles ranks as the second city of France and is a great seaport on the Mediterranean. It is a vast centre for exports, but has many industries of its own, 4, 14
Picture: 4, 17

Marshall Aid. See *Organisation for European Economic Co-operation.*

Marshall, Dr., was a companion of Sir Ernest Shackleton, during the dash for the South Pole, 1908, 2, 372

Marshall Islands. These are to be found in the North Pacific and consist of two distinct groups. They were captured by U.S. Forces in 1944.

Marshall Street, Westminster, was where Britain's War Cabinet had its underground headquarters.
Picture: 2, 249

Marshall, William, Earl of Pembroke, was one of the ministers who ruled the country for a time after the death of King John (1216). He died in 1219, 2, 106

Marsh Asphodel. See *Bog Asphodel.*

Marshmallow. A plant bearing rose-coloured flowers and found growing in marshy places.
—as a plant used for making medicines, 1, 133

Marsh Marigold. Wild plant bearing in spring large, buttercup-like flowers, 1, 302
Colour Plate: British Wild Flowers, 1, *between* 304 and 305 (Plate 4)

Marsh Thistle. A plant which produces a large purple plume, 1, 301

Marsh Tit. Member of the Tit family often found in British woodlands and beside streams and ponds.

Marston Moor. Name of a battle fought in 1644 between the royal army under Prince Rupert and the parliamentary forces under Fairfax and Cromwell, who won the day.

Marsupials is the term applied to a race of animals, the females of which carry their young in pouches.
Of the marsupials the kangaroo is the best example, but the characteristic also appears in wombats, bandicoots, dasyures and phalangers, 9, 363

Martello Towers are circular forts built on the south and east coasts of England at the time of Napoleon's threatened invasion, 9, 326

Marten. Name of a weasel-like animal found in different parts of the world. It is able to climb trees, 3, 165

Martial. Relating to war; warlike. The Romans were a very martial race. Troops march to martial music and engage in martial exercises. A country invaded by an enemy is placed under martial law, which puts all forms of government in the hands of the military authorities.

Martin. Name given to several members of the Swallow family. Two species of this bird visit Britain in the spring and summer: the House-martin and the Sand-martin. The House-martin is black above and white below, but differs from the swallow in the fact that it is slightly smaller and the tail is not so clearly divided. It nests generally under the eaves of a house.
The Sand-martin is rather smaller and brownish in colour; it has a shorter tail, nests in burrow and clay banks. Both birds return to the same nests year after year, 1, 164, 171, 172

Martineau, Harriet (1802–76). An English novelist, she wrote *The Hour and the Man* and many books for girls and boys.

Martingale. A piece of harness consisting of a strap connecting the girth-band with the bridle.
It prevents a horse from rearing.

Martinique. An island in the West Indies that now ranks as an overseas department of the French Union. Fort-de-France is the capital, 3, 396; 4, 18

Martin Mars. Name of one of the largest flying boats. It weighs 70 tons.
Picture: 5, 203

Martlet, The. Name given in the Fleet Air Arm to the American fighter plane Grumman Wildcat, 5, 218

Martyn, Lieut. He accompanied Mungo Park in the exploration of the Niger, 2, 324

Martynia. Name of a South American plant which has hooks capable of destroying animals, 1, 352

Martyr. One who dies for his religious faith. St. Stephen was the first Christian martyr. Long before his time Socrates had died for his beliefs *c.* 499 B.C.

Marvell, Andrew (1621–78). An English poet and political writer.
Picture: 7, 136

Mary I (1516–58). Queen of England. Daughter of Henry VIII. In her reign there was much persecution of the Protestants, 2, 143, 406

Mary II (1662–94). Queen of England, Scotland and Ireland. She was married to William, Prince of Orange, our King William III, 2, 172, 173

Maryborough is the county town of Leix, Eire. Its interests are mainly those of farm and dairy produce. It is now known as Port Laoighise.

Maryborough is a gold-mining centre in the state of Victoria, Australia. The town has a population of over 6,000, 3, 205
There is a much larger port of the same name in the state of Queensland which has a population of over 14,000 and is near the coal mines of Borrum Field, and the goldfields of Gympie.

Maryland is one of the Atlantic States of the U.S.A. It has general farming, dairy-farming and other agricultural interests and raises livestock. It is noted specially for its oysters.
The capital is Annapolis.
Pictorial Map: 4, 291

Marylebone, St. This is one of the boroughs of inner London. Within its area Lord's Cricket Ground and Regent's Park are included.

Maryport is a town on the coast of Cumberland interested in iron, coal and shipbuilding, 3, 90

Mary, Princess. See *Princess Royal.*

Mary, Queen (1867–1953). Princess May, daughter of the Duke and Duchess of Teck, she was married to the Duke of York, afterwards King George V, in 1893, and with him shared the loyal affections of the peoples of the British Commonwealth, 2, 230
Pictures: At a Royal Marriage Ceremony, 2, 224
At the Delhi Durbar, 2, 232
Her Majesty Queen Mary, 2, 239
Coronation Day, 2, 243

Mary, Queen of Scots (1542–87). Daughter of James V. Became Queen of Scotland five days after her birth but spent her early years in France. Abdicated in favour of James VI in 1567. She was beheaded at Fotheringay, 2, 146, 150, 152, 406
—she worked many tapestries to be used as wall hangings, 8, 391
Pictures: Queen Elizabeth Signs the Death Warrant, 2, 147
The Palace at Linlithgow, 3, 121
Queen Mary Leaving France, 2, 149
Reproved by John Knox, 2, 151
On Her Way to Execution, 2, 150

Masai is the name given to one of the tribes of East Africa, 3, 372
Pictures: 3, 377

Masai Reserve is a tract of territory in East Africa set apart for the use of the Masai tribesmen, 3, 372

Masaryk, Thomas Garigue (1850–1937) First President of the Republic of Czechoslovakia which came into existence after the Great War of 1914–18, following 300 years of bondage under the Austrians. Masaryk devoted his life to the cause of his country's freedom from foreign rule. He was succeeded as President by his chief helper, Dr. Benes, who remained leader of the Czech government in exile during the Nazi occupation of the country in 1939–45.

Mas-a-Tierra is the name of the island in the Juan Fernandez group on which Alexander Selkirk lived, providing the inspiration for *Robinson Crusoe.*

Mascot (Sydney) Airfield. An important airport in Australia used for long-distance services to Europe and America.
Picture: Taking off for the Sydney-Vancouver Flight, 5, 225

Masefield, John Edward, O.M. (born 1878). The Poet Laureate. His first work was *Salt Water Ballads,* 1902. He has written dramas, religious plays and short stories, 7, 155
Poem: Cargoes, 9, 89
Picture: 7, 155

Maseru, close to the border of the Orange Free State, is capital of Basutoland.

Mashonaland is the name given to the eastern part of Southern Rhodesia. Salisbury, the capital of Southern Rhodesia, stands upon the high plateau of Mashonaland, 3, 296

FOR A MUSQUASH COAT



Canadian National Film Board.

Found chiefly in Alaska and Canada, the *Musquash*, or *Muskrat* (see p 257), is a land and water animal. About a foot in length, it has webbed feet. It is trapped for the sake of its valuable fur.



Lewis W. Walker.

The *Mongoose* (see p. 247) is famed as a snake-killer, but is equally destructive of rats. The one seen above was photographed in Hawaii, where a number were imported to deal with a plague of rats.



Canadian National Film Board.

The *Moose* (see p. 250) is the largest member of the deer family, brown in colour, and standing about 6 feet high at the shoulders. In Europe it is called the Elk. Note the large palmate antlers and the pendant muzzle. Notwithstanding its great size, the Moose can travel at great speed and almost noiselessly through the forest.

Masjid-i-Shah Mosque. See *Royal Mosque.*

Mask. A covering for the face, worn to conceal the features or to represent a humorous or fantastic character. In Greek drama the actors wore masks, but in more modern times make-up is generally used. A more unpleasant form of mask were the gas-masks issued to all of us whether in the Forces or not, during the Second World War. (*p.h.*) See also *Masquerade.*

Mask is the name of a lake or lough in Connemara, County Galway, Eire, 3, 144

Mason, A. E. W. (1865–1948). Popular British novelist. He wrote *The Four Feathers, At the Villa Rose, Prisoner in the Opal,* and *House in Lordship Lane.* His plays included *The Witness for the Defence* and *The House of the Arrow,* 7, 255
Picture: 7, 257

Masonry. That which is built by masons in stone and brick; the art and occupation of a mason.
Freemasons are members of a secret society. They are not masons by trade, but certain tools used by masons are adopted as their emblems.

Masquerade. Name given to a ball where the dancers appear wearing masks. This form of dance was once very popular but is seldom heard of now.

Massachusetts is one of the New England States of the U.S.A. It faces the Atlantic and is noted for its fruits and other crops. Boston is the capital. It was at Plymouth, in this State that the Pilgrim Fathers landed in 1620, 2, 158
Picture. 2, 155
Pictorial Map: 4, 291

Massage is the scientific stroking and kneading of the limbs, body and head, which stimulates the muscles and organs, and in some cases restores injured muscles to their proper condition or positions.

Mass Production is a term applied particularly to motor cars and similar machines, the vehicle proceeding from stage to stage along a line through different groups of fitters.
Picture: 5, 168

Mastabeh is the name given to the platform or raised part of a village house in Palestine, 4, 180

Mastersingers. Name given to guilds of musicians formed in Germany, 7, 157

Mastiff. A large English dog, stoutly built, with deep, hanging lips and large ears. Though very brave, the mastiff is generally a gentle creature.
Picture: 10, 111

Mastodon. An elephant-like animal once plentiful both in Europe and Asia, 1, 35
Colour Plate: Animals of Prehistoric Times, 1, *facing* 36

Masurian Lakes, are in the south-west of what was formerly the province of East Prussia and were the scene of a Russian defeat in the war of 1914–18, 2, 235

Matabele. Africans of the Bantu race who live in Matabeleland, now part of Rhodesia
—Rhodes and the Matabele, 2, 219; 3, 294

Matabeleland is a district of Southern Rhodesia. The Matabele are of the Bantu stock akin to Zulus.
Bulawayo is the chief town.

Matadi is a town and port of the Belgian Congo, on the River Congo.

Matang Hills are high ground near Kuching, the capital of the British colony of Sarawak in North Borneo.
Picture: 3, 403

Matapan, Cape, the southernmost point of Europe, is in the south of Greece. It was off this point on the night of March 28th, 1941, that the British Fleet gained a brilliant victory over the Italian Navy which made an attempt to interfere with the passage of British troops from Greece and Crete to N. Africa. Many enemy ships were sunk or damaged, 2, 252, 266; 8, 19

Mathematics is the science which deals with problems of numerical relations and of space and form. Pure mathematics includes arithmetic, geometry, algebra, trigonometry and the calculus. Applied mathematics includes mechanics, physics in its various divisions, and astronomy.
Thales is regarded as the first theoretical mathematician. Pythagorus, Euclid, Archimedes, all added to Greek knowledge of mathematics. In later years Descartes, Napier, Newton and others took it further, while in our own time Einstein has put forward new theories for the mathematician to work upon. See *Great Thinkers of All Nations,* 7, 339 *et seq.*

Matheson Beach is one of the bathing places of Miami, Florida, U.S.A.
Picture: 4, 293

Mathiola. A hardy annual plant, popularly known as night-scented stock.

Matilda, who died 1083, was the Queen of William the Conqueror. She worked a tapestry illustrating fifty-eight scenes in the life of her husband.

Matilda, daughter of Henry I from whom Stephen seized the English Crown, 2, 97

Matlock. Famous inland watering place. It stands on the River Derwent, in Derbyshire

Matopo Hills. Situated about 20 miles from Bulawayo in Southern Rhodesia. In the Matopo Park wild animals roam. Cecil Rhodes called the heights "The World's View" and here he was buried. 2, 219; 3, 296, 302
Picture: 3, 299

Matterhorn is a peak of the Alps on the borders of Switzerland and Italy. It rises to a height of 14,705 ft., 4, 62
Picture: 4, 57

Maugham, William Somerset (born 1874). Well-known English novelist and playwright. His books include *Of Human Bondage, Ashenden, Razor's Edge,* and among his plays *The Breadwinner, Our Betters,* and *Sheppey. Summing Up,* published in 1938 is an autobiographical sketch, 7, 260

Maui is one of the Hawaiian islands in the North Pacific. It was discovered by Captain Cook, 2, 314

Maundy. The day before Good Friday; Thursday in Holy Week. On that day what is called Maundy money is distributed on behalf of the sovereign, among poor people in Westminster Abbey. The custom of washing the feet of pilgrims was abandoned in 1754.
Charles II first struck a complete set of Maundy money—silver coins worth fourpence, threepence, twopence and a penny, and all his successors have kept up the practice at Westminster Abbey ever since.

Maupassant, Guy de (1850–93). French novelist, perhaps best-known as a writer of short stories, 4, 16

Mauretania is the name of a 34,000-ton Atlantic steamship belonging to the Cunard White Star Line. The present ship, launched in 1938, is the second of the same name. The original *Mauretania* and her sister ship, the *Lusitania,* were two of the earliest liners to be driven by turbine engines, 5, 257
—she held the Blue Riband of the Atlantic from 1909 to 1929, 8, 64

Mauritania is a French protectorate in West Africa. Much of the country is desert land inhabited by Arabs. Dates are one of the principal crops.

Mauritius. A British colony and island in the Indian Ocean east of Madagascar. The capital is Port Louis. The main crop is sugar, 3, 388
—it was won from France by the Treaty of Vienna (1815), 2, 208
—how the higher parts were made desolate, 1, 320

Maus is the name of an historic castle on the banks of the River Rhine. It is also known as the castle of Deurenburg.
Picture 4, 65

Mausoleum. A splendid monument containing a burial chamber. At Frogmore, near Windsor, is the Royal Mausoleum, in which lie the bodies of Queen Victoria and the Prince Consort.
The word is taken from the name of Mausolus, King of Caria, for whom his Queen Artemisia built a splendid tomb in 353 B.C., 7, 292
Picture: 7, 286

Mavis. A name by which the thrush is sometimes known.

Mawddach. A river in west Merionethshire. It flows past Cader Idris.
Picture: 3, 107

Mawson, Sir Douglas. An Australian explorer who accompanied Shackleton on his expedition of 1908. Later, Mawson and Professor David reached the South Magnetic Pole by a sledge journey of over 1,250 miles, 3, 244

Maxim, Sir Hiram Stevens (1840–1916). An American inventor. He brought out the Maxim gun, an aerial torpedo, a smokeless powder and an aeroplane, the motive power of which was steam.
Picture: One of the Earliest Flying Machines, 5, 187

Maximilian, (1832–67). Emperor of

Mexico, 1863–67. He was brother of the Emperor Francis Joseph of Austria. When French troops invaded Mexico he was made Emperor, renouncing his rights as an Austrian prince. After a short troubled reign he was captured and shot by the Republicans, **4**, 298

Maximum means the greatest possible amount; the highest point
If a boy scores 100 out of 100 marks in an examination, he may be said either to make the maximum, or get the maximum number, of marks.

Maxstoke Castle, in Warwickshire, is a fine example of the castellated house which began to take the place of the feudal castles in the fourteenth century. Its building was begun in 1345 by William de Clinton.

Maxwell, James Clerk- (1831–79). See *Clerk-Maxwell, James.*

May is the name of an island at the mouth of the Firth of Forth in Scotland

Mayas. An ancient people who lived in Central America. Remains of their cities can still be seen there, **4**, 297
See also *In America Before Columbus*, **9**, 28 *et seq.*
Pictures: Descendants of the Mayas, **9**, 26
In the Land of the Mayas, **9**, 27
From Ancient Buried Cities, **9**, 28

May-Bug. See *Cockchafer.*

May Day. Name given in olden times to the 1st of May. It was always a holiday and people danced round the maypole In more recent times it has become the day on which the international Labour movement hold celebrations.

Mayflower. Name of the vessel in which the Pilgrim Fathers sailed from Plymouth to America in 1620, **2**, 158; **4**, 261
Picture: **2**, 155
Colour Plate The Departure of the Pilgrim Fathers, **2**, *facing* 156

May-Fly. An insect of which many distinct varieties are found in this country Some of them have a life of only a few hours and they usually appear in the month of May
They are used as bait by fishermen
See *The Angler's Art*, **8**, 245

Mayo is a county of western Eire, in the Province of Connaught. It is mountainous. Cattle rearing is a main interest.
The county town is Castlebar

Mayo Composite Aircraft. An assembly of two aeroplanes, the smaller one mounted on the wing of the larger.
Picture: **5**, 214

Mayor is the title given to the Chairman of a city or borough council, and he also becomes the chief magistrate. The mayors of the chief cities have the title of Lord Mayor. At one time the Lord Mayor of London was the only "Lord Mayor." **9**, 67, 338
Picture: Lord Mayor's Procession to the Law Courts, **3**, 10

Maypole. A feature of village greens round which in olden times folks danced merrily on May 1st, **2**, 117
Picture: **2**, 119

May, Princess, was the name given to the daughter of the Duke and Duchess of Teck who became our beloved Queen Mary (*q.v.*).

May Tree. See *Hawthorn*

Mayweed. A wild flower of the fields and hedges, the scentless Mayweed has daisy-like flowers about 2 ins. across with yellow centres, on long smooth stalks. In appearance it is similar to the Stinking Mayweed, but the latter has an unpleasant odour when handled while Scentless Mayweed, as its name implies, has no smell. (*p.h.*)

Mazarin, Cardinal Jules (1602–61). An Italian by birth, but had served France since 1639. He followed Cardinal Richelieu as first minister and raised France to a high position in Europe, although he ruled despotically, **4**, 7

Maze. A confusing network of paths and passages Many readers have no doubt made the acquaintance of the famous maze at Hampton Court

Mazzaroth is the name of a star mentioned in the Book of Job, believed to be the planet Venus, **8**, 141

Mazzini, Joseph (1805–72) A great Italian patriot who worked to unite his country He was a member of a revolutionary society known as the Carbonari and later founded his own movement "Young Italy," **4**, 150

M.B. means Bachelor of Medicine.

M.B.E. means Member of the (Order of the) British Empire

M.C. means Master of Ceremonies and Military Cross

M.D. means Doctor of Medicine

Mead is the name of a beverage made from honey that has been fermented

Meade Egg Pulping Machine is an Australian invention and is used in the Commonwealth dairy produce factories
Picture. **3**, 208

Meadow Crane's-Bill. A form of wild geranium, **1**, 302

Meadowlark. Name sometimes given to the Meadow Pipit (*q.v.*)

Meadow Pipit. A small British bird seen on moors and in meadows. The plumage is olive-brown above and almost white below Related to the Wagtails.
Cuckoos often deposit their eggs in Meadow Pipits' nests, **1**, 181

Meadowsweet is a tall wild plant bearing sweet-smelling blossoms, **1**, 302
See also *Spiræa.*
Special Colour Supplement: British Wild Flowers, **1**, *between* 304 and 305 (Plate 2)

Meaford is a place near Birmingham where is situated a new power station in the North-West Midlands district of the British Electricity Authority.

Mealies is a name used in Africa for maize or Indian corn in a prepared form.
Picture: **3**, 278

Meath is a county on the eastern side of Eire in the Province of Leinster. Its principal river is the Boyne. Agriculture is the main industry.
Trim is the county town.

Meath, Earl of. The twelfth Earl was the founder of Empire Day, May 24th, the anniversary of Queen Victoria's birth

Mecca is one of the capitals of Saudi Arabia and is a city holy to Moslems, thousands of them making pilgrimages to it each year for it was at Mecca that Mohammed, their Prophet, was born, **4**, 205 *et seq*
—visited by Ibn Batuta, the fourteenth century traveller, **2**, 271, 383
Picture: **4**, 206

Mechanic. A skilled workman. especially one who makes or repairs machinery. In a broader sense, anyone who makes use of tools for constructing things, whether houses, woodwork, steelwork or machines is a mechanic.
The study of mechanics is the study of that branch of science which deals with the effect of force on things, as applied through levers, wedges, pulleys and so on.

Mechanics Bay is an airport near Auckland in the North Island of New Zealand, **3**, 272

Mechanism. Parts working together to produce an effect; a machine. The mechanism of a watch, commonly spoken of as its "works," is composed of the main and hair springs, a number of toothed wheels and a balance wheel.

Medallion. A tablet bearing carved figures in relief; a large medal. Medallions of the first kind are usually round or oval.

Medals in the Royal Navy and the British Army date from the middle of the seventeenth century. Charles I struck both gold and silver medals in 1643. The first medal to depend from a coloured ribbon was the one struck for the Battle of Culloden, 1746
The Victoria Cross was instituted in 1856; the George Cross in 1940

Medehamstead, *i.e.*, a "homestead amidst the meadows" Name by which, in olden times, the cathedral city of Peterborough was known.

Medellin is the second largest city of Colombia and is an important textile centre.
Picture **4**, 334

Medes. A race of people closely allied to the Persians, **2**, 6

Medici. One of the great families of ancient Florence whose fortunes rested primarily upon banking. Two of the greatest Medici, Cosimo and Lorenzo, were extremely powerful and were renowned as patrons of the arts, **4**, 149

Medici, Lorenzo di. See *Lorenzo di Medici.*

Medicine Hat is a well-known town and flour-milling centre of Alberta, Canada It stands on the Saskatchewan River and is served by the Canadian Pacific Railway.
The town has supplies of natural gas which is used in power plants.

Medieval means something belonging to the Middle Ages. Medieval history covers the period from about A.D. 500 to A.D. 1500.

Medina is one of the holy cities of Arabia and a place of pilgrimage for pious Moslems, **2**, 383; **4**, 206

Mediterranean Sea is the largest inland sea. It is more than 2,300 miles in length and very deep. At no point is it more than 500 miles in width The Mediterranean was the "Great Sea"

around whose shores arose the mighty empires of the ancient world. Its importance as a modern sea route dates from the opening of the Suez Canal. See *Through the Blue Mediterranean*, 4, 129 *et seq.*

Medium. An element in which a thing moves or lives; a means or agency. Water is the natural medium for ships and fish; air that for aeroplanes and birds.
Ether is the medium by which light and heat are transmitted to us from the sun, and air that by which sounds are carried from place to place.

Medlars are hardy fruit trees the produce of which is eaten as dessert or made into preserve. It is a native of Greece, Persia and Asia Minor, and is occasionally found in Britain.

Medway. A river of Kent which flows into the Thames. It is about seventy miles in length, 3, 33
—the Dutch sailed up the Medway (1667), 2, 168

Meercat, an animal closely related to the mongoose.

Meerut is a city of the United Provinces of India. It was founded by Asoka about 250 B.C.

Megalopa. Name given to a young crab in the mid-way stages of growth. 1, 236
Picture: 1, 237

Megaphone. An appliance for making words audible at a distance. Used on board ship, at large gatherings of people and for coaching in athletic events.

Megapods. Name given to Australian birds known as "mound-builders." They bury their eggs in mounds and incubation takes place from the heat of the sun.

Megatherium. A large extinct animal of the sloth type the remains of which have been found in South America.
Colour Plate: Animals of Prehistoric Times, 1, *facing* 37

Megiddo. Name of a place in Palestine. Here the Turkish Army was decisively defeated in 1918, 2, 240

Meintjeskop is a hill at Pretoria, the capital of the Union of South Africa. The government offices in Union Buildings overlook the city from half-way up the hill.
Picture: 3, 285

Meissonier, Jean Louis Ernest (1815–91). A great French artist and portrait painter. He was born at Lyons.
Picture: Retreat from Moscow, 2, 202

Mekke. The name of a dance performed by the Fiji Islanders. By means of this dance, tribal news is told. The "dance" is performed seated.
Picture: 3, 392

Mekong is the name of the chief river of Indo-China. For part of its course it forms the boundary between Siam and the Federation of Indo-China, 4, 212

Melanesians. One of the races of people in the Pacific islands. The Melanesian people are dark-skinned and fuzzy-haired, 3, 390

Melanesia is the name given to groups of islands in the Pacific Ocean. Among them are New Britain, the New Hebrides, New Caledonia and others.

Melba, Nellie, Dame (1861–1931) (Helen Porter Armstrong). Australian singer famous throughout the world. Her voice was a soprano of great range and purity.

Melbourne is the capital of the state of Victoria, Australia. It is situated at a point where the Yarra River enters Hobson Bay. Its population is nearly one and a half million, 3, 232
—it was sited by John Batman, 3, 204
Pictures: A Stack of Wheat, 3, 209
Butter in the Cool Stores, 3, 213
Showing the "Crimp" in the Wool, 3, 215
Russell Street, Melbourne 3, 234
Collins Street, Melbourne, 3, 235
Modern Block of Flats, 7, 338
Pictorial Map: 3, 243
Photo-tone Supplement: Modern Architecture: Royal Melbourne Hospital, 7, *between* 288 and 289

Melksham, an industrial town of Wiltshire and a great market centre for farm produce. It has a well-known rubber factory.

Melody. An arrangement of single musical notes following one another to make a tuneful rhythmic phrase or succession of phrases.
See also *Music*

Melody Time is the title of a Walt Disney film giving merry pictures of cowboys and buffaloes.
Pictures: 9, 293, 294

Melon. A juicy fruit akin to the cucumber grown in greenhouses and frames. Its seed will grow after forty years, 1, 376

Melrose. Town of Roxburghshire, Scotland, on the River Tweed.

Melrose Abbey is a famous place of pilgrimage in Roxburghshire. It was founded in 1136 by David I, King of Scotland. Here is buried the heart of Robert the Bruce.
Picture: 3, 112

Melton Mowbray. A town of Leicestershire in the centre of a great hunting country. It is famous for its pies.

Membrane. A tissue in a living body, covering an organ or lining a cavity. The mucous membrane lines the inside of the mouth, throat, stomach and intestines.

Memel. See *Klaipeda.*

Memlinc, Hans (fifteenth century). A great Flemish painter, he settled in Bruges, 7, 12
Pictures: The Martyrdom of St. Ursula, an Art Wonder of the World, 7, 10, 11

Memphis was the capital of Egypt in the times of the ancient world when the Pharaohs ruled, 4, 196

Menagerie. A place where wild animals are kept for training or for exhibition. The Zoological Gardens are a menagerie of the second kind on a very large scale.

Menai Strait, about fourteen miles in length, separates the Welsh mainland from Anglesey, 3, 96
Picture: 3, 95

Menai Suspension Bridge, built by Telford, links the mainland of North Wales with Anglesey 3, 102; 5, 46
Picture: 3, 95
Photo-tone Supplement: Bridges Big and Little 5, *between* 64 and 65

Menam. The great river of Siam, it flows into the Gulf of Siam and has Bangkok, the Siamese capital and chief seaport, a few miles from its mouth, 4, 207

Mencius was one of the great Chinese writers and philosophers who appeared during period 600–200 B.C. He was a pupil of the grandson of the great Confucius, 4, 223

Mendel, Gregor Johann (1822–84). An Austrian scientist who worked out laws on the subject of heredity, *i.e.*, the relations between parents and offspring, particularly in plant life. This branch of science is known as Mendelism, 7, 366

Mendenhall Glacier. Famous river of ice near Juneau, Alaska.
Picture: 1, 39

Mendelssohn-Bartholdy, Jakob Ludwig Felix (1809–47). Famous German composer. His masterpiece is the oratorio *Elijah*, 7, 181
Picture: 7, 176

Mendicant. One who makes a business of begging for alms; a beggar.
The mendicant friars of the Middle Ages lived by begging from the charitable, as they were forbidden to own property of any kind.

Mendip Hills is the name given to a ridge of high ground in Somerset. At one point through the Mendips water has cut the Cheddar Gorge, 3, 56
Picture: 3, 56

Mendosa was the name of one of Magellan's captains, 2, 283

Mendoza. A province of Argentina The province has a capital of the same name, 4, 321

Mengtsze is an important copper mining centre of southern China. Tin is also mined. There is a railway link with Hanoi and Haiphong, 4, 212

Men, Races of, are usually divided, according to colour, into five classes: white, yellow, brown, black and red. The white races of Europe and America number about 725,000,000; the yellow or Mongolian Asiatic races 700,000,000; the black, or negro, races of Africa, 210,000,000; the brown Malayan races, 105,000,000 to which may be added the Semitic races originating in North Africa, 100,000,000; and the red of North America 30,000,000.

Mensuration is a department of mathematics. It deals with areas, lengths and volumes.

Mentelth. A lake of Perthshire, it contains three islands, one of them associated with Mary, Queen of Scots. It is called a lake and not a loch, even in Scotland.

Menthol, as used in medicine, is the product of a variety of mint, this plant family coming under the name Mentha.

Mentone is a famous health resort of the French riviera, 4, 13, 138

Menu. Name given to the bill of fare of a meal

Men Very Easily Make Jugs Serve Useful Needs and Pleasures. Phrase to help us remember the names of the nine planets Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune and Pluto, 8, 112

Mercantile Marine of a nation is all the shipping belonging to it which is

engaged in the carrying of passengers and cargoes. See *The Merchant Navy*, **8**, 25 *et seq.*

Mercator, Gerard (1512-94). The geographer who invented a special method of using lines of latitude and longitude for the purposes of mapping. He produced a map on the Mercator system of projection about 1568–69 and in 1585 issued the first portion of his Atlas, so named, from the figure of the Greek god bearing the World on his shoulders which decorated the title-page of this first collection of Maps. See *Atlas* and *Maps*. (*p.h.*)

Mercer is the name given to a merchant who deals in silks and woollen goods. Mercers in London have their livery company.

Merchandise means goods ready for selling; articles of trade or commerce; wares or goods for the world's markets, dealt with by merchants or traders.

Merchant Adventurers was the term used to describe associations of traders to control business with foreign countries. They were granted a charter by Henry VII, **2**, 304; **4**, 343

Merchantman. A ship used for carrying goods. The word is not employed now as much as it was in the days of sailing ships, having been replaced by "cargo ship."

Merchant Navy. No definite date can be given for the beginning of the British Merchant Navy, but it developed rapidly in the reigns of Henry VIII and Queen Elizabeth.
See *The Merchant Navy*, **8**, 25 *et seq.*

Merchant Navy Class. Name of a type of express passenger engine on the line till recently known as the Southern Railway and now in the Southern Region.
Colour Plate: A Merchant Navy Class Pacific Locomotive, **5**, *Frontispiece.*

Mercurius Politicus. The name of an official newspaper published while Oliver Cromwell was in power, and edited by Marchamont Nedham. At this time John Milton acted as censor of the Press, **9**, 206

Mercury, also known as Quicksilver, is a chemical element (symbol Hg); it is the only known metal which is liquid at ordinary temperatures. This dense, mobile, silver-white liquid metal is used in many ways, including the manufacture of barometers and thermometers, **9**, 404

Mercury. Name of the smallest planet and the one nearest to the sun.
It revolves round the sun in eighty-eight days, its diameter being about 3,100 miles, **8**, 112, 139
Pictures: The Smallest Planet, **8**, 139
Our Neighbours, **8**, 141

Mercury was a ship of the Royal Navy which Captain Cook commanded at the Siege of Quebec, **2**, 310

Mercury, in the legends of ancient Greece, was the Messenger of the gods, **5**, 348
Picture: **5**, 349

Mercury and Argus, The Story of. A tale from the myths and legends of the Greeks, **5**, 348

Meredith, George (1828–1909). Great English novelist and poet. He wrote *The Ordeal of Richard Feverel* and *Diana of the Crossways*, **2**, 221; **7**, 220

Merganser. A red-breasted wild duck which visits this country in winter, though in many parts of Scotland and Ireland it may become a resident. It is an adept diving-bird.

Mérimée, Prosper (1803–1870). A famous French novelist and one of the great masters of French literature, **4**, 16

Merino. A breed of sheep which can carry an astonishing amount of wool of high quality, **4**, 135, 394
Picture: **3**, 215

Merionethshire. A county of Wales, between Carnarvon and Montgomery. Cader Idris and Bala Lake are in this county, and the Rivers Dee and Dovey.
The county town is Dolgelly.

Merlin. A small falcon often seen in Great Britain, more particularly in northern parts. It nests in the heather.

Merlin. A wizard and magician of old legend. He lived at the court of King Arthur, **3**, 92; **5**, 383

Merom, Waters of. A lake on the course of the River Jordan in Palestine. It is also known as Lake Merom, or Bahr el Hulch.
Photo-tone Supplement Scenes in the Holy Land, **4**, *between* 176 and 177

Merriman, H. Seton. See *Scott, H. S.*

Merry Wives of Windsor, The. A play by William Shakespeare, said to have been written in fourteen days and at the desire of Queen Elizabeth, **7**, 130
Picture: **7**, 131

Mersea is an island off the Essex coast. It is famous for its oyster beds.

Mersey. One of our most important rivers. It rises in Derbyshire and empties into the Irish Sea.
The great port of Liverpool stands on the Mersey, with Birkenhead on the Cheshire side, **3**, 72, 83
Pictures: **3**, 30, 31; **3**, 81
Colour Plate: One of Britain's Sea Gateways, **3**, *facing* 85

Mersey Tunnel. This tunnel was opened by King George V in 1934 and links Liverpool and Birkenhead. It runs for nearly three miles beneath the river and is one of the largest underwater tunnels in the world—there is also a railway tunnel, 1,230 yards long, opened in 1886 by King Edward VII, then Prince of Wales, **2**, 223

Methylated Spirit is spirit of wine rendered undrinkable by the addition of methyl alcohol (made from wood) and naphtha, **9**, 412

Merthyr Tydvil, in Glamorgan, South Wales, is a centre of the iron and steel industry, **3**, 94
—the first railway locomotive ran here **5**, 122

Merton, Battle of (870), was a Danish victory during the invasion of Wessex, Ethelred I was mortally wounded at this battle and in 871, Alfred became King, **2**, 404

Mesabi Ranges are highlands of the U.S.A. lying to the south-west of Lake Superior. They are an important mining region, especially for iron ore, **4**, 266

Mesa Verde is one of the great National Parks of the U.S.A. and is in the state of Colorado. It is notable for ancient Indian cliff villages.
Picture: **4**, 283

Meseta is the name given to the high tableland in the heart of Spain, **4**, 134 *et seq.*

Mesopotamia was the name given by the Greeks to the Valley of the Tigris-Euphrates, meaning "the land between the rivers." It was one of the first cradles of civilisation and now forms part of the land we call Iraq (*q.v.*), **2**, 238
See *Mesopotamia and Beyond*, **4**, 199; also *Great Nations of the Past*, **9**, 11 *et seq*

Messiah is the title of Handel's most widely popular musical work. It was first performed in 1742, **7**, 160

Messina is the name of the Strait separating the "toe" of Italy from Sicily and of the large Sicilian port on the shore of the Strait, **4**, 154

Messines Ridge ran from Messines to Wytschaete in Belgium. It was lost to the Germans in 1914 and was recaptured by the New Zealand Division in 1917. It changed hands again several times before finally reconquered by the Allies in 1918, **2**, 239

Messrs. means *Messieurs*, French for Gentlemen, or Sirs.

Mestizo is the name given to people of Central America who are of mixed Spanish and Indian blood, **4**, 298

Metacarpal. Relating to the bones which come next to the wrist bones of the hand. Counting outward from the wrist, we have in each finger a metacarpal bone, and beyond that two other bones called phalangos.

Metal. Substance having a "metallic" lustre, malleable, ductile, and a good conductor of heat and electricity. Metals belong to one of the two classes into which all elements are divided. See under separate headings, *Gold*, *Silver*, *Iron*, etc. See also *Metals*, **9**, 346

Metal Mike is the name given familiarly by sailors to the modern gyro-pilot.
Picture: **5**, 274

Metals, Weight of. A block of lead measuring a foot every way weighs 710 lbs., eleven and a half times the weight of the same bulk of water. One of zinc would scale 427 lbs., one of cast iron about 470 lbs., one of copper 547 lbs., and one of silver 650 lbs.
Quicksilver weighs 847 lbs. to the cubic foot, gold 1,200 lbs. and platinum 1,260 lbs., **6**, 134

Metcalfe, John. A blind Yorkshire boy, he became a surveyor and road engineer, constructing 200 miles of highway, **5**, 36

Metchnikoff, Elias (1845–1916). The son of Jewish parents, he was born in Russia. He discovered the function of the white corpuscles in the blood, which is to guard it against microbes.

Meteor. A type of jet aeroplane which in 1946 reached a speed of 616 miles an hour.

Meteorite is the name given to a metallic or stony mass, usually rich in iron,

which reaches the earth from the skies. Their origin is still obscure, **8**, 162

Meteorological Office. A government institution, originally founded in 1854 as a branch of the Board of Trade, but now under the Air Council and with its headquarters at the Air Ministry, Kingsway, London Its work includes the collection and discussion of meteorological observations from ocean and land areas all over the world and the issue of weather reports and gale warnings based on the information so gathered. The work of the British Rainfall Organisation was taken over by the office in 1919. See *Meteorology*.

Meteorology is the science and study of the weather and deals with the processes going on in the earth's atmosphere Like Astronomy it is an observational science. It was first based on the personal observations of individuals and it was from such records that Dampier (*q v*) compiled his *Discourse on Winds* about 1700 The Royal Meteorological Society began in 1850 while the Meteorological Office was founded in 1854 as a department of the Board of Trade for the purpose of collecting weather observations made at sea This office now forms part of the Air Ministry, and its work includes the issue of weather forecasts and gale warnings to shipping. These are broadcast by the B B C. See *The Weather and Its Ways*, **5**, 1 *et seq*

Meteors is the name given to small bodies circling through space and sometimes approaching and reaching the earth The brightest of these bodies are sometimes known as fireballs, and the faintest as shooting stars, **8**, 160; **9**, 300
Pictures: The Story of a Meteor, **8**, 161
Iron from the Sky, **8**, 162
Another British Meteor, **8**, 163

Methil, on the Firth of Forth, is a seaport of Fifeshire. It is a centre for the export of coal, **3**, 122

Methyl Methacrylate is the chemical name for Perspex, a transparent plastic material which is widely used instead of glass, **6**, 375
Pictures **6**, 374, 375

Metis is a town of Quebec, on the River St. Lawrence.

Metre is a measure of length used on the Continent and in many parts of the world. It is rather more than 39 British inches (1·0936 yards).

Metric System of weights and measures was instituted by the French in 1801 and has been adopted by many other countries besides being used throughout the scientific world, **9**, 406
Picture: Tens and Tenths, **10**, 231

Metropolitan. Belonging to the capital city of a country. In London, which is the metropolis, or capital, of Britain, water is supplied by the Metropolitan Water Board, law and order are maintained by the Metropolitan Police Force and the Metropolitan Railway carries people to and from their work in London.

Metropolitan Police Force. Name of the Force which operates in Greater London, but not in the City. See *Police*.

Metropolitan Water Board, a public undertaking created under an Act of 1902, to supply all the population of London with water It serves a district nearly 573 square miles in area.
The Board draws its water mainly from the Thames and partly from the River Lea and from deep wells in the chalk, **6**, 241 *et seq*.

Meuse. (1) A department of north-east France.
(2) A river of France which flows through Belgium and Holland where it is known as the Maas, **4**, 24
Photo-tone Supplement Scenes in the Low Countries, **4**, *between* 112 and 113

Mevagissey is one of the holiday resorts of South Cornwall. It has a fishing fleet, **3**, 46
Picture. **3**, 50

Mewar. Another name for the state of Udaipur (*q v*.).

Mexico, United States of. This great republic of America borders on the U S A. and has an area of nearly 760,000 square miles. It is a mountainous country, largely concerned with agriculture, but it has timber, oil, and silver mines The population is about 23 millions. Mexico City is the capital, **4**, 297 *et seq*, 388
Pictures. Floating Gardens in Mexico, **4**, 297
Mexico's Independence Monument, **4**, 299
Scenes in Mexico, **4**, 300

Mexico City is the capital of the United States of Mexico. It is a fine modern city and has a population of nearly 1¼ millions, **4**, 299
Pictures Mexico's Independence Monument, **4**, 299
The Paseo de la Reforma, **4**, 300

Mexico, New. See *New Mexico*.

Meyerbeer, Giacomo (1791–1864) Well-known German composer, he wrote operas, **7**, 183

Meynell, Alice Christiana (1849–1922), English poet and prose writer, **7**, 156

M.F.H. means Master of Foxhounds.

Miami is a world-famous pleasure resort on the Atlantic shore of Florida, U S A , **4**, 294
Picture. **4**, 293

Mica. A mineral which splits into thin, tough, transparent sheets. As it is able to stand great heat, it is used in the doors of stoves, whilst its resistance to the passage of electricity makes it a good insulator, **9**, 317

Micawber, Mr. Wilkins, is a famous character in Dicken's novel *David Copperfield* He was always waiting for something to "turn up."
The character is supposed to have been drawn from the author's father.

M.I.C.E. See *M Inst C E*.

Mice, Fancy. These little animals make interesting pets, the "Rex" strain being very popular. How to house and feed, **8**, 321
Picture: **8**, 320

Michael was the name of one of the ships of Sir Martin Frobisher, **2**, 295

Michael Angelo, Buonarotti (1475–1564). A great Italian who was painter, sculptor, architect and poet. One of the world's greatest artists, **4**, 149; **7**, 16
Pictures: The Statue of Lorenzo dei Medici, **7**, 15
A Statue of Moses, **7**, 17

Michaelmas (September 29th) is one of the English quarter days and the Feast of St Michael and All Angels
—it is a favourite time for farms to change hands, **6**, 390

Michaelmas Daisy. Popular perennial plant, growing in many varieties at different heights and with a wide range of colours.
This is the perennial aster, **8**, 280

Michigan is one of the north central States of the U S A. It has agricultural and timber interests, but is most famous for its wide range of manufactures especially its motor-car industry
Lansing is the capital
Pictorial Map. **4**, 291

Michigan is one of the five Great Lakes of North America. It is within the frontiers of the U S A. and Chicago is its chief port, **4**, 266
Picture: Taking a Ship Downstairs, **5**, 55
Pictorial Map: **4**, 291

Mickey Mouse was the name of the first very popular series of films made by Walt Disney on his new method of animated cartoons, **9**, 283
Picture **9**, 289

Micmacs is the name of a tribe of Red Indians

Microbe. A tiny, living thing, visible only under the microscope Microbes include both bacteria and bacilli The study of these is an important profession known as Bacteriology or Microbiology, **7**, 385

Micronesians. One of the races of people living in the Pacific Islands, *e g*, the Gilbert and Ellice group, **3**, 390

Micrometer is an instrument used in workshops for making more accurate linear measurements than is possible with a simple rule or scale, **9**, 404

Microphone. An instrument used in the transmission of wireless broadcasts, it renders audible the faintest sounds and is used also in large halls and even in places of worship.
—an essential part of a telephone, **6**, 193
Picture. **2**, 193

Micro-photograph. A picture taken with a camera having a microscope attachment.

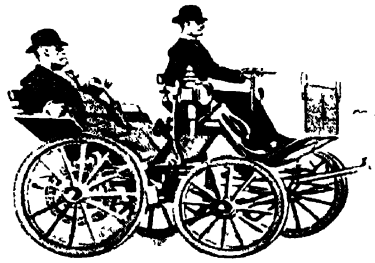
Microscope. An instrument fitted with lenses which greatly magnifies anything viewed through it. It renders visible objects and details which are quite invisible to the naked eye, **7**, 412
Picture. The Electron Microscope, **7**, 415. (*p h*)
Photo-tone Supplement Through the Microscope, **9**, *between* 336 and 337

Midas was a king of the Greek legends, ruler of Phrygia, **5**, 345, **6**, 85

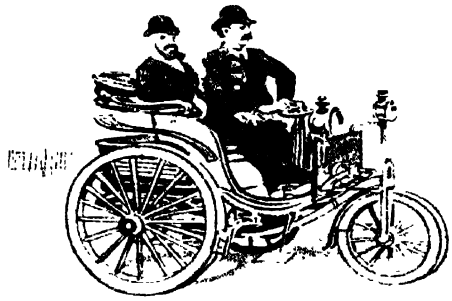
Middelburg is the chief town of the Dutch Island of Walcheren. The place has industrial activities and is a holiday centre. It was badly damaged during the Second World War, **4**, 32

Middle Ages. Name given to the period falling between the ancient and modern times. May be reckoned

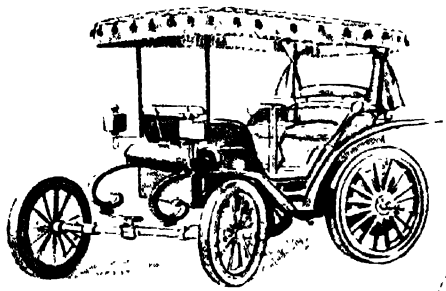
PROGRESS OF THE MOTOR-CAR



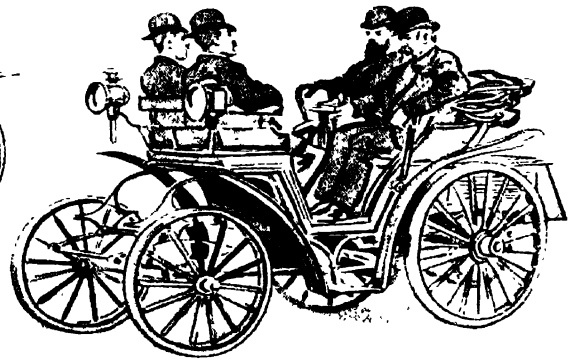
THE FIRST DAIMLER CAR OF 1886



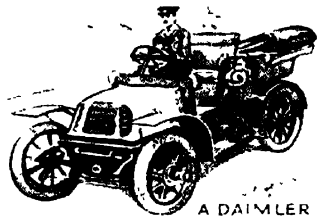
BENZ CAR OF 1888



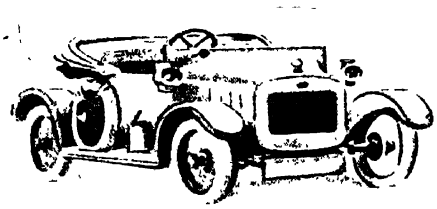
THE FIRST DAIMLER FOUR-SEATER OF 1889



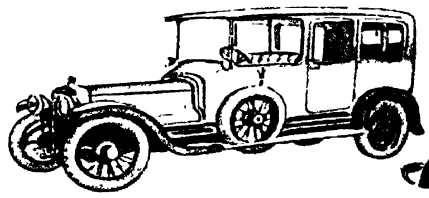
A BENZ VIS-A VIS OF 1892



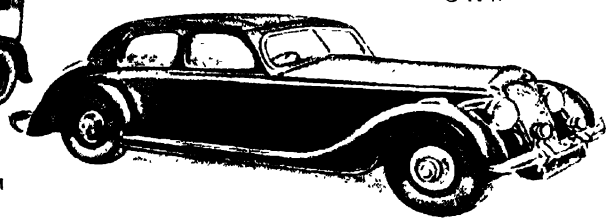
A DAIMLER OF 1902



1912 TWO-CYLINDER FRICTION DRIVE G W K



45 H.P. 6 CYL DAIMLER OF 1921



MODERN SALOON CAR

Specially drawn for this work.

It was the introduction of the internal combustion engine, a petrol gas motor, by Gottlieb Daimler in 1884 which really begins the history of the *motor-car* (see p 251) and Daimler cars were on French roads by 1886. As will be seen, the early car-makers adapted the same design as used in the horse-drawn vehicles of the period, and it was not until about 1900 that a distinctive design developed. As speed increased the design of the car gradually changed to the stream-lined machine we know so well to-day.

from the fifth century to the latter part of the fifteenth century, roughly a thousand years, **2**, 116; **9**, 324
Photo-tone Supplement: The Boy Through the Ages, **8**, *between* 368 and 369

Middlesbrough, at the mouth of the Tees, in the North Riding, is one of Yorkshire's great centres in the iron and steel industries, **3**, 81

Middlesex. A county of England on the north bank of the River Thames. In the main it is built over and is to all intents and purposes a portion of Greater London, though there are still some open parts devoted to market gardening, fruit-growing and dairy-farming
Middlesex may be best described as the metropolitan county but only Rutland is smaller in area. At the same time, it is one of the most populous of English counties. The Middlesex County Council sits at Westminster.

Middleton, Sir Hugh (1560-1631). See *Myddelton.*

Middlewich is one of the salt towns of Cheshire, **3**, 76

Midland Valley is the name sometimes given to the so-called Lowlands of Scotland. Here live eight-tenths of the Scottish people, **3**, 110 *et seq.*

Midlothian is a county of Scotland noted for its fine farms. It extends from the Forth to the Pentland and Moorfoot Hills and has important industries.
Edinburgh is the county town.

Midnight Sun. Within the Arctic Circle at certain times during summer, the sun is still seen above the horizon at midnight. Tourists travel to Norway to witness this sight, **4**, 44

Midsummer Night's Dream. Wonderful play by William Shakespeare acted before Queen Elizabeth. It was first produced 1593-94, **7**, 130
Picture: **7**, 130
Photo-tone Supplement: The Boy Through the Ages, **8**, *between* 368 and 369.

Midway Island is one of the numerous small islands forming the Hawaiian Islands in the Pacific. It was in the neighbourhood of this island that the American Navy inflicted a heavy defeat on the Japanese Fleet, June 4th to 6th, 1942, **8**, 24

Mielot, Jean, was a famous scholar and penman of the Middle Ages.
Picture: **8**, 189

Mignonette. A hardy annual plant with very fragrant blossom. Family name *Reseda*, **8**, 278

Migrants, Partial, are those birds that move from one part of the country to another according to the season of the year.

Migrate means to move from one country or region to another. At certain seasons of the year some species of birds migrate in vast numbers.

Migratory Birds. See *Birds that Migrate.*

Milan, the great commercial and industrial centre of northern Italy, is the second largest city in that country. It has a population of more than 1,250,000. Within the city is a wonderful cathedral, begun in 1386 and not completed until 1815. It can accommodate 40,000 people, **4**, 150
Pictures: **4**, 149; **7**, 309

Mile End is a district of East London through which runs Mile End Road.
—Jack Straw marched to Mile End, **2**, 127

Milfoil. Name sometimes given to the plant yarrow because of its deeply divided leaves, *i.e., mil.*, a thousand — thousand leaves, **1**, 306

Milford Haven. An ancient and historic harbour on the Pembrokeshire coast, it has important fishery interests.

Milford Sound is one of the fjords of the South Island of New Zealand, **3**, 256
Pictures. Mitre Peak, Milford Sound, **3**, 252
Pembroke Peak and the Lion, **3**, 259
Sutherland Falls, **3**, 267
A Cave Formed in the Ice, **5**, 6
Photo-tone Supplement. Capital of a Dominion, **3**, *between* 256 and 257

Milk is one of the most important of our foodstuffs and is the source of butter and cream. Our supplies are drawn from dairy cows which must be milked at regular times twice every day. Condensed milk has most of the water evaporated and is sometimes sweetened with sugar.
In many parts of the world goats are kept for milk. In the far north reindeer supply milk.

Milk Thistle. A plant having very large leaves marked with whitish veins. The flowers are purple.
—in the Argentine, **1**, 338

Milkwort. A wild plant of heaths and downs. The flowers are deep blue.

Milky Way is the name given to a faint band of misty light stretching across the sky which is composed of innumerable stars, **8**, 178
Pictures: Part of the Milky Way, **8**, 169
Millions of Stars Revealed, **8**, 172

Mill, John Stuart (1806-73). A great English philosopher. His writings include *A System of Logic* and *On Liberty*, **7**, 366

Millais, Sir John Everett, R.A. (1829-96). A famous painter who came of a Jersey family. He was elected President of the Royal Academy in 1896, **2**, 221; **7**, 93
Pictures: The Boyhood of Raleigh, **2**, 148
The North-West Passage, **2**, 219
The Blind Girl, **7**, 91

Mill Dale. One of the lovely Derbyshire dales, it is now under the guardianship of the National Trust like several other beauty spots of this region, **3**, 415

Miller, Philip. Gardener to the Duke of Bedford, he criticised his master, **1**, 321

Miller's Thumb. Popular name for the small freshwater fish, Bullhead (*q.v.*).
Special Colour Supplement: British Fresh Water Fishes, **8**, *between* 256 and 257

Millet is a variety of grass grown mostly for its seeds in India, China and other parts. When ground, the seeds yield a fine white flour, **4**, 236

Millet, Jean Francois (1814-75). An artist who loved to paint the peasants of his native France and gave us "The Angelus," "The Sowers" and "The Gleaners," **7**, 74
Pictures: "The Angelus," "The Gleaners," **7**, 73

Mill Hill, in Middlesex, is a residential suburb of Greater London. It is famous for its public school for boys. The Mill Hill Observatory is situated on high ground in the neighbourhood.

Millikan, Dr. Robert (born 1868), is a distinguished American scientist who is regarded as the discoverer of the cosmic ray. He has also done much atomic research, and was awarded the Nobel Prize in 1923, **7**, 414

Millipedes are creatures of the soil having two pairs of legs on each section of the body. They are found in all parts of the world and do little harm to crops.

Millom. An industrial town of Cumberland. It is in the Furness coal and iron field, **3**, 90

Mills, Robert, was the architect who designed the Washington Memorial dedicated in Washington, the capital of the United States, in 1885.
Picture: **4**, 264

Milne, Alan Alexander (born 1882). English writer who has done much for girls and boys. His *Winnie the Pooh* and *The House at Pooh Corner* are most popular, **7**, 273, 274

Milo is a Greek island in the Ægean Sea. It is famous because here was found the statue Venus de Milo.

Miltiades, a soldier of ancient Athens. Under his command, the Greeks won the battle of Marathon (490 B.C.), **2**, 21
Picture: **2**, 23

Milton, John (1608-74). One of the greatest of English poets. *Paradise Lost* is considered to be his finest work. This was followed by *Paradise Regained* and others. **7**, 136 (*p.h.*)
as censor of the Press, **9**, 206
Pictures. The Meeting of Milton and Marvell, **7**, 136
The Blind Poet at Work, **7**, 137

Milwaukee is a large town of Wisconsin, U.S.A., on Lake Michigan. It is the transport and commercial centre for a large area and has many industries.

Mimosa is the name given to a species of acacia which bears tiny yellow balls in May. See also *Acacia, Wattle.*

Mimulus. A plant also known as Musk and sometimes as the Monkey Flower.
—where it grows wild, **1**, 338

Minaret. A tall slender tower attached to a Mohammedan mosque. It is surrounded by balconies from which the muezzin, or priest, calls the people to prayer.

Minch, The. The sheet of water lying between the Island of Lewis and the mainland of Scotland.

Mind. The question "What is Mind?" has been answered in various ways by different philosophers, and there is still no general agreement. The relationship between mind, brain and body is dealt with in *How the Brain and the Mind Work*, **6**, 399 *et seq.*

Mind, The Unconscious. The existence of an "unconscious mind" is now generally recognised. Man is not aware of all his mental processes, **6**, 415

Mindanao is the second largest island in

the Republic of the Philippines. Zamboanga and Davao are its chief towns. It has rich iron ore deposits and produces gold, but is relatively unexplored, 4, 212

Minden. A town of Germany on the River Weser. Near the town is a monument commemorating the Battle of Minden (1759), a British victory of the Seven Years' War, **2**, 189; **4**, 84

Minehead. A popular seaside and holiday resort of Somerset, on the south shore of the Bristol Channel. It is one of the gateways to Exmoor, **3**, 414

Miner, A Day in the Life of a. About the routine and methods employed by the men and boys who work in our collieries, **6**, 23 *et seq.*
Pictures Working at the Coal Face, **6**, 23
The Deputy Gives First Aid, **6**, 24
In Charge of the Winding Gear, **6**, 25
Coal Cutting Machines, **6**, 26, 32, 36
Driving A New Roadway, **6**, 27
Setting Screw Jack Props, **6**, 28
Pithead Baths, **6**, 28
Pit Pony and Diesel Loco, **6**, 29
Pit Head Gear, **6**, 30
Shot Firing, **6**, 32
A Safe Roof Overhead, **6**, 33
Boys Learning Their Job, **6**, 34
The Deputy Tests for Gas, **6**, 35
Nantgarw Mine, **6**, 37, 40
Workers at the Screens, **6**, 38
Where Coal is Screened and Washed, **6**, 39
Colour Plate: Above and Below Ground at a Colliery, **6**, *facing* 36
See also *Coal, The Story of a Lump of,* and *Coal and Its By-products.*

Miners' Lamps are of two main types, but there are few collieries where a naked light is allowed, **6**, 23
Pictures. Miners' Lamps of the Open Type, **6**, 18
In the Lamp Room, **6**, 31

Ming Dynasty. Emperors of this dynasty ruled China from 1368 until 1644. The name Ming means "illustrious" and under the early Ming Emperors, China recovered many of her lost glories, **4**, 230

Miniature. On a small scale—greatly reduced in size. The miniature gardens of Japan are famous and we hear a good deal nowadays of miniature golf-courses.
A miniature (*noun*) is a painting of very small size, usually on ivory or vellum. Portraits are often painted as miniatures for lockets and pocket cases.

Minimum. The lowest degree, the smallest amount. It is the opposite to maximum. The days are at their minimum, or have a minimum length, in mid-winter.
The plural of minimum is minima.

Minks are small animals of the weasel family. They are trapped for their fur in Canada.
Picture: **3**, 162

Minneapolis is a large city of Minnesota, U.S.A., on the Mississippi. It is a great centre for oil and agricultural produce.

Minnesingers were, in Germany, the counterpart of troubadors and minstrels in other countries, **7**, 157

Minnesota is a north central State of the U.S.A. It is concerned mainly with agriculture but has industrial interests and important iron ore mines. St. Paul is the State capital.
Pictorial Map: **4**, 291

Minnow. Small freshwater fish, common in British rivers and most parts of Europe. It varies in length from three to six inches and is often used as bait in angling for bigger fish.
Special Colour Supplement: British Fresh Water Fishes, **8**, *between* 256 and 257

Minoans were the people who lived on the island of Crete, their empire there lasting until some time between 1400 and 1380 B.C. The royal palace has been excavated by British archæologists, **4**, 158
Picture: **4**, 161

Minorca is the name of one of the Balearic Islands, a group in the Mediterranean belonging to Spain. From 1713 until 1756, this island was British territory, **2**, 178, 184

Minor Planets. See *Planets.*

Minos, King. Ruler of the Minoans who lived in Crete in the Mediterranean over three thousand years before Christ. It is considered that parts of King Minos' palace date to the period 3400 B.C., **4**, 158

Minsk is the capital of the republic of White Russia, or Byelorussia, which is a part of the Soviet Union. It has a population of over 238,000
Picture. **4**, 116

M.Inst.C.E. means Member of the Institution of Civil Engineers.

Minstrel. A wandering singer and musician of the Middle Ages. Minstrels composed, sang and generally accompanied on a harp or other stringed instrument, songs dealing with heroic subjects.

Mint. A perennial herb widely grown in countries outside the tropics. Ten kinds are found in Britain, chief of which are garden-mint and peppermint. From another variety menthol is obtained

Mint, The Royal. This is the name given to the government establishment where our money is coined. The building is at Tower Hill, London, and it has branches at Melbourne, Perth (Australia), Ottawa (Canada) and Pretoria (South Africa). The Crown alone, through Parliament, has the right to issue coinage. The history of the Royal Mint goes back to Anglo-Saxon days, **6**, 86
See also *Money from the Mint,* **9**, 234 *et seq.*
Pictures: A Furnace Room in the Royal Mint, **9**, 234
Dealing with "Coinage Blanks," **9**, 235
Examining Finished Coins, **9**, 236

Mint-New is the term applied to coins that are as perfect as when they were minted. They should be lifted flatwise between finger and thumb, **8**, 297

Miolnir was the name of Thor the Giant's hammer, **5**, 333

Miquelon. See *St. Pierre and Miquelon.*

Mirabeau, Honoré Gabriel Riqueti, Count (1749–91) A French statesman who took an important part in the earlier events of the French Revolution. He was imprisoned for a time in the Château D'If.
Picture: **4**, 17

Miracle. Something brought about by a power greater than man's, a marvellous thing or happening. God's power was shown in the miracles performed by Christ and His followers.

Mirage. A desert illusion, sometimes seen at sea as well. It is caused by light being bent out of its course, **5**, 104
Picture. **5**, 107

Mirfield is an industrial town of the West Riding of Yorkshire, interested chiefly in textile goods

Miri. A town of Sarawak and the centre of the oilfield being developed there, **3**, 404

Misiones is the name of a region of the Argentine bordering Paraguay and Brazil. Here are found the wonderful cataracts of the Iguassu River.
Picture. **4**, 325

Miskito. The name of a tribe of Indians living in Nicaragua, **4**, 304

Misr. This word, which actually is the Egyptians' own name for their country, is also the name used by Egyptian Air Lines, **4**, 195

Missal. A book containing the Mass, used by Roman Catholics. It corresponds to the Prayer Book of the Church of England, **7**, 2

Missile. A thing that is thrown to wound or kill. A stone or spear hurled with the hand, an arrow shot from a bow, and a shell fired from a gun or a bomb launched from an aeroplane are all equally missiles.

Missing Link. Term used by scientists for the earliest ancestors of man, connecting the ape with the intelligent human being, **9**, 320

Missionary. One sent out to preach the Gospel. The first missionaries were the twelve Disciples whom Christ sent out in pairs (Mark vi. 7) to heal the sick and preach the Word of God.
A missionary is not in all cases sent abroad. For example, missionaries are attached to police courts to help prisoners.

Mississippi is one of the southern central States of the U.S.A. Its interests are mainly those of agriculture and cotton is the chief crop, but much timber is grown.
Jackson is the capital.
Pictorial Map **4**, 291

Mississippi. A great river of the U.S.A. It flows from Minnesota to the Gulf of Mexico, **4**, 263, 292
—when the river is in flood, **1**, 7
—it carries into the Gulf of Mexico 500,000,000 tons of matter every year, **1**, 38

Missolonghi. A port of south-western Greece where Lord Byron, one of our greatest poets, died in 1824. He had gone to Greece to fight for Greek independence, **4**, 157

Missouri. Name of one of the States of the U.S.A., its interests are mainly agricultural and leading crops include maize, oats, potatoes, and cotton.

Its livestock is important. The State capital is Jefferson City.
Pictorial Map. **4**, 291

Missouri. A river of the U.S.A. which rises in the Rocky Mountains and flows into the Mississippi. It is known as the "Big Muddy," **4**, 293

Mistle Thrush. The largest member of the thrush family to be found in this country. During the winter it may be seen in flocks and it sings when stormy weather keeps other birds quiet, **1**, 206. (*p h*)

Mistletoe. A parasite plant, thrusting its roots under the bark of its host. The berries are poisonous, **1**, 344
—the plant used in medicine, **1**, 333
— a variety with pink berries, **1**, 348
—how does the mistletoe root? **1**, 349
Pictures: Mistletoe Spray, **1**, 348
Story of the Mistletoe, **1**, 349

Mistral is the name given to a piercing wind that sometimes blows on the south coast of France, **3**, 42

Mitcham is a town and residential centre of Surrey. At one time it grew lavender which produced the finest essential oil from which lavender water is made. The growth of outer London has, however, almost eliminated lavender-growing in Mitcham, **9**, 244

Mitchell, Reginald Joseph (1895–1937). A British aircraft designer he was responsible for the Schneider Trophy seaplanes. Later designs included flying-boats for the R.A.F. and the famous Spitfire fighter.

Mitchell, Sir Thomas, a noted explorer of Australia. In 1836, he journeyed overland to Cape Northumberland in south-east Australia, returning to Port Phillip Bay, **3**, 204

Mites are very small creatures which usually live on plants or animals. Examples are the harvest mite, the red spider and the red mite.
Diseases are sometimes carried by mites.

Mitla. Name of a place in Mexico, famous for its ruins. It is not far from the City of Mexico.
its ancient cypress tree, **1**, 331

Mitre Peak is the name of a mountain top at Milford Sound, New Zealand.
Picture, **3**, 251

Mitylene. An island in the Ægean Sea, **7**, 121

Miyajima is an island of Japan set in an inland sea from which much fish is caught.

Mizzen-Mast. The mast next behind the main mast of a ship. In a three-masted ship it is the one next the stern; whilst in a four-masted vessel it is next but one, the rear-most being called in this case the "jigger."

Mlalo. A place in the Usambara Mountains of Tanganyika Territory and the centre of an agricultural and resettlement scheme, **3**, 374

Mlle. means *mademoiselle*. It is the French equivalent of our word "Miss" for a girl or woman who is not married.

M.M. means Military Medal.

mm. means millimetre. The millimetre is a measure of length used on the Continent of Europe and in other parts of the world. It is equal to the thousandth part of a metre.

Mme. means *Madame*. It is the French equivalent to our British "Mrs."

M.O. means Medical Officer.

Moa. A giant bird, similar to the ostrich, which once lived in New Zealand. It is now extinct, but stuffed specimens can be seen in the museums of the Dominion, **3**, 261
Colour Plate. Animals of Prehistoric Times, **1**, *facing* 37

Mobile, in Alabama, is one of the great cotton ports of the U.S.A., **4**, 292

Mobile. Able to be moved or to move about quickly. Armoured cars are replacing cavalry to a great extent as being more mobile.
Mobile police patrols are mounted on motor cycles in order to move about quickly from place to place.

Mocambique is the Portuguese name for the part of East Africa we know as Mozambique (*q v*)

Mocha. A port of south-western Arabia in the Yemen. It gives its name to the famous coffee which it exports, **4**, 205

Mocking Bird. A native of America. The bird is so named because it can so faithfully reproduce any sound it happens to hear.

Mock Orange. See *Philadelphus*.

Mock Plane Tree. See *Sycamore*.

Modder is the name of a river of the Orange Free State, Union of South Africa. It is a tributary of the Vaal.

Model-Maker. In the production of films the model-maker is a useful person. His models of houses and mansions are dealt with by photographic process and appear to the eye as full-size buildings.
Picture. The Model Makers at Work, **9**, 251

Model Parliament. This was the title given to the parliament called together in 1295. In it all classes of society were represented, **2**, 110, 404

Model Racing Yacht. How to make, **8**, 357. With *Diagrams*

Model Railways. Popular gauges are 00 (⅜ in. between rails), 0 (1¼ in.) and 1 (1¾ in.). For motive power clockwork, steam and electricity are available, **8**, 346
Pictures. **8**, 346

Model Sailing Boat. How to make, **8**, 356. With *Diagrams*

Models and Model Making. Some Things to Make and Do, **8**, 325 *et seq*
Model Gliders, **8**, 325, 335
Model Aeroplanes, **8**, 329, 340
Model Railways, **8**, 346
Model Ships You Can Make, **8**, 351
Boats and Boat Building, **8**, 356
Kites and How to Make Them, **8**, 362
Working Sand Models, **8**, 364
A Simple Electric Motor, **8**, 369
A Model Travelling Crane, **8**, 372

Model Ships You Can Make. (1) A Model Cargo Steamer. (2) A Model Trawler, **8**, 351. With *Diagrams*.
Pictures: Teaching the Young Idea, **8**, 350
A Model Trawler, **8**, 353, 354
A Page of Model Ships, **8**, 355

Model Submarine, A. How to make an interesting elastic-driven vessel, **8** 360. With *Diagrams*.

Modulation. The process of changing from one key to another in a musical composition.
Modern music depends largely for its effect on frequent and skilful modulation.

Moelfre is a small seaside resort of Anglesey, **3**, 102

Moel Soch is a peak of the Berwyn Mountains, North Wales, 2,713 ft. in height.

Moeru, or Mweru, is the name of one of the African lakes discovered by Livingstone in 1867, **2**, 336

Moffat, Robert (1795–1883). Famous Scottish missionary who worked in Africa (1816–70). David Livingstone married his daughter, **2**, 331

Mogador. A famous port of Morocco in the French zone. It stands on the Atlantic coast.

Mogaung is a town of northern Burma on the railway from Mandalay to Myitkyina. It stands on the Ledo road which was a Chinese supply route during the Second World War, **4**, 216

Moghal Serai is an important junction on the main Calcutta-Bombay railway of India, **3**, 354

Moghul. Babar, the conqueror of India, was called the Great Moghul, and so the empire which he founded there was known as the Moghul Empire and its rulers as the Moghul Emperors, **3**, 326

M.O.H. means Medical Officer of Health.

Mohair. Name of a fabric made from the hair of the *Angora Goat* (*q v*)

Mohammedans are people who in their religion are followers of Mohammed (570–632) as set forth in the Koran.

Mohammed Muglak was an Emperor at Delhi with whom the fourteenth century traveller Ibn Batuta took service, **2**, 271

Mohawks is the name of a tribe of Red Indians.

Mohicans. A well-known tribe of Red Indians.

Mokattam Hills is the name given to a range of heights in Egypt, near Cairo, **4**, 196
Picture. **4**, 192

Mold is the county town of the Welsh county of Flintshire. It is the centre of a colliery district and has many industries.

Moldau is another name for the River Vltava. See *Vltava*

Moldavia is a district of Rumania. It contains a part of the Carpathian Mountains, **4**, 106

Mole. A small burrowing animal, common in country places. It has a thick soft coat and makes a wonderful underground fortress, **1**, 129; **9**, 364
Pictures. A Great Little Digger, **1**, 128
The Cosy Home of the Mole, **1**, 129

Molecule, the smallest possible quantity of a substance which has the qualities of that substance. It may consist of a single atom or be a group of two or more atoms.
A molecule of water, for example, consists of two atoms of hydrogen and one atom of oxygen. If one atom of either element were added or taken away, the molecule would cease to be a water molecule.

Molesey is a town of Surrey which forms a favourite residential district. It takes its name from the River Mole, a tributary of the Thames

Moliere, Jean Baptiste Poquelin de (1622-73). Great French dramatist. Probably his best-known work in England is *Les Précieuses Ridicules*, **4,** 8

Mollison, James (born 1905) A pioneer of long-distance aeroplane flights. He has held many records, **5,** 205

Mollorca is the Spanish name for the Mediterranean island we know as Majorca.
Picture **4,** 133

Molokai is one of the Hawaiian islands in the North Pacific

Molten means melted, made liquid by heat. Molten rock is poured as lava from a volcano during an eruption

Moluccas, The. Name of a group of islands in the Dutch East Indies They are sometimes known as the Spice Islands, **2,** 282

Molluscs, or Mollusca, is the name given to snails, slugs, shell-fish and cuttle-fish, oysters, etc. They are cold-blooded, soft-bodied animals without a bony skeleton, **1,** 227
Picture **1,** 11

Mombasa. The capital of the Coast Province of Kenya Colony and the main port, **2,** 271, 290, **3,** 370
Pictures Mombasa from the Mainland, **3,** 369
Loading Ivory at Mombasa, **4,** 368

Momotombo is the most famous volcano in Nicaragua It is more than 4,000 ft high, **4,** 304
Picture **4,** 306

Mon, an old-time name for the Island of Anglesey, **3,** 103

Mona was the name once given to the Island of Anglesey, and to the Isle of Man, **3,** 103

Monaco. A principality on the French Riviera, within whose territory comes the famous and fashionable pleasure resort of Monte Carlo, **4,** 172
Pictures Monaco, the Capital, **4,** 170
The Casino at Monte Carlo, **4,** 170

Monaghan is a county of Ireland Its main interests are farming and the linen trade
Monaghan is the county town which grew up round a monastery It has a famous cathedral and is a centre of the linen trade, **3,** 144

Mona Lisa. Name of a famous picture painted by Leonardo da Vinci It was stolen from the Louvre at Paris but afterwards recovered It is often called "La Gioconda," **7,** 14
Picture **7,** 13

Monastery. A collection of buildings in which monks live. Travellers in the Middle Ages would stay at a monastery guest-house.
Pictures: Travellers in the Middle Ages, **2,** 121
At Work in the Writing Room, **2,** 122

Monazite is a sand found in Carolina, U.S.A. It yields the rare earth thorium.

Monch is the name of a Swiss mountain in the Bernese Oberland. It rises to a height of more than 13,000 ft, **4,** 62

Monet, Claude (1840–1926). A well-known French artist who painted realistically with broken touches.
Picture **7,** 74

Money. A device for making the exchange of goods and services more simple and does away with the need for exchanging one commodity for another by a system of barter. All kinds of articles in general use have been used as money, but nowadays coins and pieces of paper which are guaranteed by a bank or government to be of a certain value are used, **9,** 353
See also *Money from the Mint*, **9,** 234

Money Flower. Popular name for the biennial plant *Honesty (q.v.)*

Mongolia is the name given to a vast tract of country in Asia which is the home of nomad Mongols and Kalmucks. It lies to the north of China, Inner Mongolia actually being part of the Chinese Republic Outer Mongolia is an independent state (See *Outer Mongolia*), **4,** 238, 243

Mongols are the people who live in Mongolia In olden days they were fierce warriors and raiders and under such leaders as Jenghiz Khan forged a mighty empire It was to guard China against their attacks that the Great Wall was built, **4,** 105, 230

Mongoose. An animal with grey fur and bushy tail found in India It is well-known for its usefulness in catching snakes
Picture **10,** 237

Monitor. A large lizard, it is found in most hot countries
The name is also given to an armoured vessel of light draught used for long-range coastal bombardments. A few were used in the 1939-45 war, but the first Monitor was used in the American Civil War

Monk, George, Duke of Albemarle (1608-99) He served in the Parliamentarian army during the Civil Wars and reached the rank of General After Cromwell's death, he played a principal part in bringing about the restoration of King Charles II (1660), **2,** 165, 166, 407 he destroyed the forest of Aberfoyle, **1,** 325

Monkey. Popular name for the mammals known as Primates, with the exception of man and the anthropoid apes They are usually divided into two main classes those of the Old World and of the New World. The American monkeys have four more teeth, the nostrils are more widely separated, and many of them have prehensile tails which the Old World monkeys do not possess. The New World monkeys are, generally speaking, less agile and not so intelligent as the Old World types, **1,** 98 *et seq Photo-tone Supplement* Monkeys and Their Ways, **1,** *between* 96 and 97

Monkey-Boat is the name given to a long, narrow barge of about 30 tons as used on English canals, **3,** 72

Monkey-Eating Eagle. See *Batelour*

Monkey Flower. Name given to the plant musk or mimulus, **1,** 338

Monkey Puzzle. Name of a tree belonging to the Araucaria family; also known as Chili pine, **6,** 2

Monkeys, Green. See *Green Monkeys.*

Monkeys of the New World. These animals have no cheek pouches and no proper thumbs on their hands, **1,** 102

Monkshood is the name given to the pretty perennial plant *Aconite (q.v.).*

Monmouth (James Scott), Duke of (1649-85). Claimed relationship with King Charles II and raised the standard of revolt against King James II. He was defeated and executed, **2,** 171, 408, **3,** 56

Monmouth Rebellion (1685) **James, Duke** of Monmouth disputed the accession of James II and landed at Lyme Regis. The defeat of his forces at Sedgemoor (*q.v.*) brought the Rebellion to an end, **2,** 172, 408

Monmouth is the county town of Monmouthshire. It stands where the Rivers Wye and Monnow join together

Monmouthshire, an English county situated on the border of Wales Newport, Ebbw Vale, Abergavenny and Tredegar are in this county, **3,** 94

Monnikendam is a picturesque township of northern Holland, **4,** 32

Monnow. A small river of Monmouthshire It joins the Wye at Monmouth.

Monogram. Letters interwoven to form a design The ordinary monogram contains only initial letters, in the complete monogram will be found all the letters of a word or words
The monogram of the sovereign appears on pillar-boxes and mail-vans, among other things

Monolith. A large stone block usually monumental or used to support a monument Both primitive man and the early civilisations erected huge stone blocks for various purposes
Picture. Tales Told in Stone, **7,** 284

Monopoly means the sole right to sell some kind of goods or to carry on some particular business or trade

Monotype. A device for casting single types and arranging them in lines It consists of two separate pieces of apparatus
One has a keyboard, the operation of which causes holes to be punched in a roll of paper. The other casts, assembles and spaces out the type when the roll is passed through it. *Photo-tone Supplement* How This Book Was Built, **6,** *between* 176 and 177

Monoxide. A chemical compound containing one atom of oxygen to each molecule. The oxygen of air passing through glowing fuel first forms carbon monoxide (CO), one atom of oxygen combining with one atom of carbon
Before it leaves the fuel each molecule may pick up another carbon atom and become carbon dioxide (CO_2).

Mons is a town of Belgium, the centre of a coal-mining and engineering district, **2,** 234; **4,** 24

Monsoon. This word is derived from an Arabic word meaning "seasonal"

and is applied to any periodical wind. Thus India has a south-west monsoon which brings the rainy season, 3, 312

Montacute House is near Yeovil in Somerset and was the home of Edward Phelips, chief prosecutor of Guy Fawkes in 1606, 3, 412
Picture: 7, 319

Montagu of Beaulieu, Lord (1866–1927), pioneer of motoring. He drove King Edward VII in his car in 1900, 2, 226

Montaigne, Michel de (1533–92). A famous French essayist whose work has a peculiarly individual style, 4, 16

Montana is a State of the U.S.A. bordering on Canada. It is an important mining and industrial centre.
The capital is Helena.
Pictorial Map: 4, 290

Mont aux Sources is one of the highest peaks in the Drakensberg Mountains of South Africa. It is 10,800 ft. high, 3, 304

Mont Blanc, on the frontiers of France and Italy, is the loftiest peak in the Alps, rising to a height of 15,780 ft., 2, 389

Montbretia. Flowering in the late summer, this plant is a distant cousin of the gladiolus and grows from a corm.

Montcalm, Marquis de (1712–59). The French commander against whom General James Wolfe fought in Canada.
They both lost their lives in the engagement at Quebec, 2, 186, 187, 189

Monte Carlo is on the Mediterranean coast in the principality of Monaco. It is famous for its casino, 4, 13, 148, 172
Pictures: 4, 170

Mont Cenis is a mountain on the borders of France and Italy. It is noted for the roadway which here crosses the Alps and for the Mont Cenis railway tunnel which is nearly 8 miles long, 4, 64

Montenegro is the name of a federal unit, or province, of Yugoslavia It is in the south-west of the country, against the Albanian frontier and has a small coastline on the Adriatic Sea. It was once an independent kingdom. Its chief town, Cetinje, is now called Titograd, 4, 94, 156

Monterey is a town of California, U.S.A. It is a famous seaside resort on Monterey Bay and has extensive business in canned fish.

Monte Rosa is the name of a peak of the Alps at a point where Italy and Switzerland meet. It exceeds 15,000 ft., 4, 62

Montesquieu, Charles Louis, Baron (1689–1755). A famous French philosopher and historian. One of his most notable works was called *L'Esprit des Lois,* 4, 8

Monteverde, Claudio (1567–1643). Well-known Italian composer, he wrote an opera *Ariadne,* 7, 172

Montevideo is an important seaport and the capital of Uruguay, South America. It was visited by Charles Darwin, 2, 344; 4, 317, 330
Picture: 4, 336

Montezuma II. (1466–1520). Emperor of ancient Mexico. He was defeated by the Spaniards under Cortes and taken prisoner, though afterwards restored to his throne as a vassal of Spain but was slain by his own subjects, 9, 30

Montfort, Simon de (1208–65). He became Earl of Leicester. His followers defeated the army of King Henry III at Lewes and he at once set about forming a properly representative Parliament, 2, 108
Picture: 2, 110

Montgolfier, Etienne and Joseph. Two French papermakers who constructed a fire balloon in 1783, 5, 185
Picture. Mongolfier Balloon Ascent, 5, 188

Montgomery. (1) County town of the Welsh shire of Montgomery. (2) Capital of the State of Alabama, U.S.A.

Montgomeryshire, a county of Wales. It is mostly mountainous and claims the Severn as its principal river. Montgomery is the county town

Montgomery, Field Marshal Lord (formerly Sir Bernard L.) (born 1887). Famous British soldier who became commander of the 8th Army in July, 1942, and led them through the victorious campaign in N. Africa to the victory of El Alamein (*q.v.*) and the invasion of Italy. He became commander-in-chief of the British Army of Liberation which landed in France in June, 1944, and with our Allies won final victory, in May, 1945. Created Viscount Montgomery of Alamein in 1946 and in 1948 was appointed Military Chairman of the C's-in-C. for Western European Defence, 2, 252, 256, 415
Picture : The Freedom of the City, 9, 63

Month is a period of time mainly regulated by the moon's motion round the earth. The solar month is the twelfth part of a year and its exact period is 30 days, 10 hours, 29 minutes, 4 seconds. The calendar month has an arbitrary number of days as shown in the almanacs.
- all the months have Roman names, 9, 301

Monticello is the name of the home of Thomas Jefferson, the third President of the United States and author of the famous Declaration of Independence. He was a skilled architect and planned his home himself.
Picture: The Jefferson Memorial, Washington, 4, 266

Montijo, Eugenie de. See *Eugenie, Empress.*

Mont Orgueil Castle overlooks Gorey Harbour, Jersey, Channel Islands. The building was begun by the Dukes of Normandy.
Picture: 3, 53

Montpelier (1) The capital of Vermont, one of the New England States of the U.S.A. (2) Town of France, dating from eighth century, capital of dept. of Hérault.

Mont Saint Michel is a granite mass lying off the northern coast of France, linked to the mainland by a narrow causeway. On it stands an ancient Benedictine fortress-abbey.
Colour Plate: Mont Saint Michel, France, 4, *Frontispiece.*

Montreal. A river of Quebec province in Canada. Its waters bring down logs from the upstream forests.
Photo-tone Supplement: For Scenery and Sport, 3, *between* 160 and 161

Montreal, in Quebec Province, is the largest city in Canada with a population of more than a million. It stands at the head of the ocean navigation on the St. Lawrence and has within its limits McGill University, 3, 184
—the French surrender (1760), 3, 156, 160
—Edward VII opens the Victoria Bridge, 2, 223
—the world's greatest grain port, 3, 178
Pictures: Montreal, Canada's Largest City, 3, 184
Park Slide at Montreal, 3, 186
Railway Terminus, 7, 338
Photo-tone Supplement: A Commercial capital and its History, 3, *between* 160 and 161

Mont Regal (the Royal Hill) was the name given by Cartier the navigator to the site on which the great city of Montreal now stands, 2, 294

Montrose is a holiday resort and manufacturing centre on the coast of Angus, Scotland, 3, 122

Montserrat, a British island, one of the Leeward group in the West Indies. Famous for its sugar and limes.

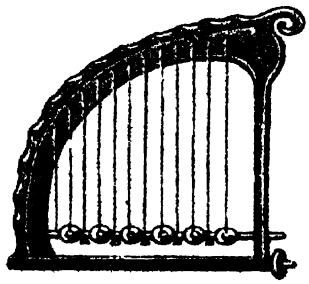
Monument, The, stands near the Billingsgate fish market, London, and commemorates the Great Fire of London.
Picture: 3, 26

Monymusk Sugar Factory, is at Vere in Jamaica. It is the largest of its kind in the British Commonwealth, 3, 398

Moon Daisy. A familiar wild flower often found in hay fields, 1, 301

Moon. The earth has for its Satellite or Companion, the Moon, which faithfully accompanies it in its yearly journeys round the Sun, at a mean distance away of 239,000 miles. The moon is a very much smaller body than the earth, its diameter being 2,160 miles as compared with the earth's 8,000 miles. It is often described as a dead world, for it has no water or vegetation, and the light it gives to the earth is a reflection of the sun's light. The surface of the moon is pitted with many craters, estimated to number 200,000, and it has high mountains, containing many peaks higher than Mt Blanc, and some nearly as high as the Himalayas. The moon's attraction is the main cause of ocean tides. See *The Sun and the Moon,* 8, 107 *et seq.* See also *Eclipses of the Moon.*
—the Moon and the Tides, 5, 28
—a voyage to the Moon by Rocket, 5, 242 *et seq.*; 7, 414
Pictures: On the Wane, 8, 133
The New Moon, 8, 133
A Mountain of the Moon, 8, 134
Was this How the Moon was Born, 8, 135
If You Stood on the Moon, 8, 136
The Valley of the Lunar Alps, 8, 137
Heights of the Lunar Mountains, 8, 138

MUSICAL INSTRUMENTS—OLD & NEW

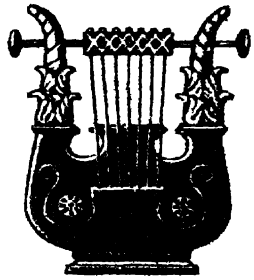


ANCIENT GREEK HARP

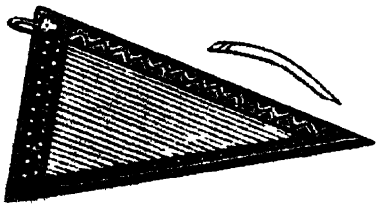


GREEK PAN-PIPES

EGYPTIAN LUTE



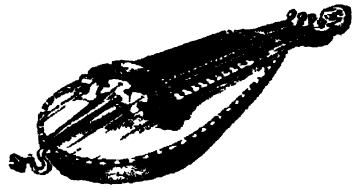
GREEK LYRE



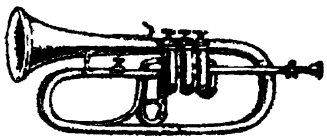
PSALTERY 12TH CENT.



REBEC 14TH CENT.



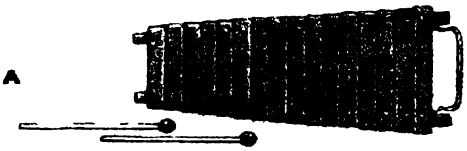
HURDY-GURDY 17TH CENT.



BUGLE



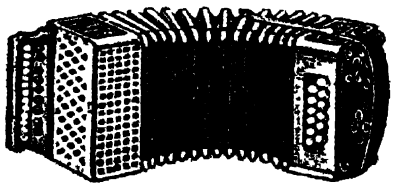
OCHARINA



XYLOPHONE



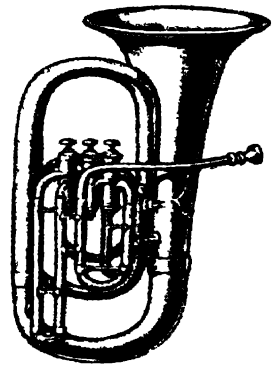
FIFE



ACCORDION



SAXOPHONE



SAXHORN DOUBLE BASS

Specially drawn for this work.

Musical instruments (see p 257) of various kinds were well known in ancient Egypt and modern instruments are in many cases improvements and variations of the older types The pipes of Pan and the Greek lyre are still with us in different forms The Rebec was the instrument used by the troubadours and minstrels of the Middle Ages to produce that 'concord of sweet sounds to charm their listeners whether princes or peasants.

Saturn in Conjunction with the Moon, 8, 158

Moon Flower. Popular name for the biennial plant *Honesty* (*q.v.*).

Moon, Man in the. The curious markings are actual features on the surface of the moon, 8, 136

Moon, Phases of the. We speak of the moon as being in its first quarter, full; in the third quarter, or new. These are the phases of the moon which are due to the different positions from which we view the lighted part of the moon's surface, as she moves along her orbit round the earth, 8, 134

Moonwort. A form of fern whose seeds or spores develop in leather-like cases.

Moor Cock. Name popularly given to the male grouse (*q.v.*).

Moore-Brabazon, Lieut.-Col. See *Brabazon of Tara, Lord*

Moore, Sir John (1761–1809). Distinguished British general who met his death at the very moment of victory in the Battle of Corunna, in Spain, 2, 202

Moore, Thomas (1779–1852). Famous Irish poet, author of *Lalla Rookh* and *Irish Melodies*

Moorfoot Hills is the name of a range of high ground in south-east Scotland within easy reach of Edinburgh, 3, 115

Moorhen. Bird often found near rivers, lakes and ponds, though not web-footed. Nests near the water, 1, 164

Special Colour Supplement British Wild Birds, 1, *between* 160 and 161 (Plate 1)

Moormen is the name given to people from Arabia who have settled in Ceylon, 3, 363

Moose. The largest member of the deer family, it is found in Northern Europe, Asia, Scandinavia and North America. A fine specimen may be 7 ft. high or 6 ft. at the shoulders, and weigh over 1,000 lbs. It feeds on leaves and young shoots. In some parts it is also known as the Elk.

Picture: 10, 237

Moose Jaw is a city of Saskatchewan, Canada. Its interests are largely agricultural, but it has many industries.

Morane was the name of a monoplane used by the French Army in the War of 1914–18, 5, 198

Morass. A tract of low, soft, wet ground; a marsh, swamp or fen. Travellers on Exmoor and Dartmoor have to beware of being caught in a morass after dark.

Moravia is the name of an old district of Czechoslovakia whose chief town was Brno. Since 1948, however, this province has been abolished as such, along with the provinces of Bohemia and Silesia. Administrative "regions" have taken their place, 4, 90

Moray. A county of the north of Scotland, on the Moray Firth. It is an important agricultural and cattle-raising district. The county town is Elgin.

At one time Moray was known as Elginshire.

More, Hannah (1745–1833). English poet and writer closely identified with Bristol. Her works led to the founding of the Religious Tract Society.

More, Sir Thomas (1478–1535). English Lord Chancellor, a man of great learning, and author of *Utopia*.

He was executed for questioning the King's supremacy, 2, 142; 7, 36

Morea is the name of that part of Greece islanded from the Greek mainland by the Gulf of Corinth and the Corinth Canal. It is the home of the currant vineyards, 4, 158

Morecambe is a popular holiday resort on the Lancashire coast facing Morecambe Bay, 3, 86

Morello Cherries are used chiefly for preserving and for culinary purposes

Moreton Bay is on the Queensland coast of Australia. Once an old convict settlement, it was later developed by free settlers who built there the fine university city of Brisbane (*q.v.*), 3, 204

Moreton Hall, Little. Built in 1540, Little Moreton Hall, near Congleton, Cheshire, is a fine example of the moated black-and-white timbered hall for which the county was at one time famed. It is one of the places now cared for by the National Trust and is open to the public, 3, 411

Picture: 3, 406

Morgan, Sir Henry (1635–88). Born in Wales and as a youth kidnapped in Bristol and sold in Barbados, he managed to join the buccaneers in Jamaica. He rose rapidly to become their leader and carried out many daring exploits against the Spaniards. Sent as a prisoner to England he won Court favour, was knighted, and returned to Jamaica as Lieutenant-Governor. His reputation as the "bold, bad Harry Morgan" has earned him a place in history, 4, 298; 8, 54

Colour Plate. Morgan Leaves His Ship to Board a Prize, 8, *facing* 37

Morland, George (1763–1804). Famous British artist, he displayed his talent at a very early age and produced upwards of 4,000 pictures, 7, 83

Picture 7, 83

Morning was the name of a famous ship sent to the relief of Antarctic explorers, 2, 371

Morning. A Poem by Robert Browning, 9, 112

Moro. The Moro people are Mohammedans who live chiefly on the island of Mindanao in the Republic of the Philippines. They were called Moros by the Spanish explorers who believed them to be Moors, 4, 214

Picture: A Moro Home, 4, 209

Morocco. A large country of North Africa in which the Atlas Mountains form the main physical feature. The country has its own Arab Sultan, but is divided into three zones—the French, which is the largest and which includes the capital of Rabat; the Spanish zone, which includes the important town of Tetuan; and the small international zone of Tangier. The country is thus largely a French protectorate. Agriculture is the main industry; olives, citrus fruits, and dates are grown in large quantities. There is considerable stock raising and phosphates are an important mineral, 4, 18, 377

Moroni, Giambattista (1520–78). A great artist of Venice. His most famous picture is probably "The Tailor."

Picture 7, 29

Morpeth. An industrial town of Northumberland having also agricultural interests. There are collieries in the neighbourhood.

Morphine is a drug obtained from the poppy, 1, 350

Morphos Butterflies, of great size and hawk like, were seen by Bates in the region of the Amazon, 2, 340

Morris, William (1834–96). English artist and poet. He was associated with Burne-Jones and Rossetti. He was keenly interested in arts and crafts and founded his own firm to make furniture, wall-papers and decorations as well as the Kelmscott Press, 2, 221

Morrison, Herbert S. (born 1888). For some years was leader of the Labour Party on the London County Council. Became an M.P. in 1923, appointed Minister of Home Security 1940–5, and from 1945 to 1951 was Lord President of the Council and Leader of the House of Commons. He was Foreign Secretary in 1951

Morse, Samuel Finley Breese (1791–1872). An American, he invented the Morse Code of signalling and sending messages, 6, 174

Morshead, was the name of one of the expedition which made the first attempt to climb Everest, 2, 390

Mosaic. Inlaid work in which the effect of painting is produced by the use of small blocks of stone, marble or other hard substances, of different colours. The Romans were very skilled in mosaic work, and used it freely for the floors of houses.

Picture A Roman Villa in Somerset, 9, 23

Moses was a law-giver and leader of the Israelites. His story is told in the Holy Bible

Picture 7, 17

Moscow, the capital of the U.S.S.R. (Russia) is a very ancient city standing on the banks of a river of the same name. It draws its water from the largest European river, the Volga, and has waterway links with the White, Baltic, and Caspian Seas. Its population is over 4 million, 4, 116

Napoleon at Moscow (1812), 2, 205

Pictures: The Red Square, Moscow, 4, 107

Part of Moscow's Underground Railway, 4, 110

The Cathedral of St. Basil, 4, 111

The Gorki Dairy, 4, 114

Moscow, The Retreat from (1812). Though the army of Napoleon reached Moscow, in the invasion of Russia, it had soon to leave the city and this formed Bonaparte's first great defeat, 2, 205

Picture: 2, 202

Moscow-Volga Canal, as its name suggests, links the Russian capital with the River Volga and so gives

Moscow an outlet to the Caspian, Baltic and White Seas, **4**, 117

Moselle is the name of a river which flows through France and Germany, emptying into the Rhine. The banks of the Moselle are largely terraced with vineyards.
The name is also given to a district of France.

Moses Fountain is in Berne and is so called because it is surmounted by a statue of Moses with the Ten Commandments
Photo-tone Supplement. The Continent of Europe, **4**, *between* 112 and 113

Moshi. A town of Tanganyika Territory in the farmlands around Mounts Kilimanjaro and Meru, **3**, 370

Mosi-Oa-Tunya is the Native name for the Victoria Falls on the Zambezi River. It means "the smoke that thunders," **3**, 296

Moskva is the name of a river of the Soviet Union On its banks stands Moscow, the Russian capital, **4**, 116

Moslems are people who follow the religion of Mohammed.

Mosman Bay is a popular suburb of Sydney, Australia, **3**, 230

Mosque of Faith, also known as the Mosque of the Conqueror, was the first mosque to be built in Istanbul (Constantinople) where it can be seen today. It dates from 1450.
Picture **4**, 162

Mosque of Sultan Ahmed I can be seen at Istanbul and is usually known as the Blue Mosque It was built during the early seventeenth century, **4**, 160, 164
Photo-tone Supplement The Continent of Europe, **4**, *between* 112 and 113

Mosque of Sultan Hassan stands in Cairo, the capital of Egypt. Its minaret, 250 ft high, is the loftiest in that city.
Picture, **4**, 194

Mosquito. A relative of the common gnat and a scourge in tropical countries It spreads disease far and wide, **1**, 274

Mosquito Bites. As a first aid remedy apply ammonia, **8**, 244

Mosquito Coast was the name given to the eastern coast of Nicaragua which was once a British protectorate The name is derived from Miskito Indians who live there, **4**, 304

Mossel Bay is a port of Cape Province, Union of South Africa

Moss-Troopers were bands of robbers who haunted the borderland between England and Scotland in the seventeenth century, **9**, 326

Mosul is the name of a district of Iraq and of its chief town on the River Tigris. The place is noted for its ancient buildings, **4**, 200

Moth. An insect similar to the butterfly, but usually distinguished by the absence of a knob on the end of the antennæ. Usually, too, the moth is more sober in colour, mostly flies at night, and when at rest the moth generally holds its wings flat or sloping over the body while the butterfly closes them vertically. A butterfly's wings work independently but with the majority of moths the front and hind wings are joined when flying by a bristle on the hind wing fitting into a catch on the forewing.
Moths vary greatly in size and there are at least 100,000 different species. In Britain more than 2,000 kinds are found. The Death's Head Hawk Moth is the largest British moth, its wing expanse being 4 to 5 ins. The markings on the thorax resemble a skull and cross-bones, **1**, 248, 252, **9**, 368
See *Beginning a Collection Butterflies and Moths*, **8**, 281 *et seq*
Pictures The Goat Moth, eggs and caterpillar, **1**, 252–3
Moths to take by Assembling, **8**, 282
Beating the Sallows, **8**, 287
Assembling and Light, **8**, 288
Sugaring for Moths, **8**, 289
Special Colour Supplement British Moths, **8**, *between* 288 and 289

Moth. Name given to a series of light aeroplanes designed and produced by the de Havilland Company The Tiger Moth was very largely used for training pilots of the R A F. during 1939–45 and after the war, **5**, 203
Pictures **5**, 200, **5**, 232

Mother Carey's Chickens. Name given to the sea birds Storm Petrels *(q v.)*

Mother of Parliaments. Name given to the British Parliament because it was one of the earliest and has been generally accepted by other countries as a model, **2**, 110

Mother of the Forest. Term applied to a Californian redwood tree that was 321 ft in height and 30 ft through the trunk, **1**, 328

Mother Shipton was a famous prophetess of the seventeenth century, **5**, 161

Motherwell is a town of Lanarkshire, Scotland. It is a mining centre and has ironworks, **3**, 121

Moti Masjid is the name of a wonderful Pearl Mosque in the Palace of Delhi, **3**, 332

Motor Car Engine. See *Internal Combustion Engine*

Motor Cars first appeared about the year 1884 Their development is described in *From Traction Engine to Racing Car*, **5**, 161 *et seq*
Pictures A Type Built in 1902, **5**, 163
A British "Napier" in 1905, **5**, 163
Motor Cars in the Making, **5**, 168
The Engine of a Modern Motor Car, **5**, 169
A Car that made History, **5**, 170
Racing Car "Thunderbolt" **5**, 171
The "Railton" Racing Car, **5**, 171
A Race for the International Grand Prix, **5**, 172
A Midget Racing Car at Goodwood, **5**, 173
A "Talbot" Racing Car, **5**, 173
Two Famous British Cars, **5**, 175
A Racing Car at Bonneville Flats, **5**, 176
Mark VII Jaguar, **5**, 177
Hillman Minx, **5**, 177
Daimler Ambulance, **5**, 181
Mountaineer Motor Lorry, **5**, 182
Progress of the Motor Car, **10**, 243

Motor Car Tyres. See *Tyre*

Motor Coaches are public service vehicles which offer great comfort to their patrons both for long and short journeys. Early examples were built in the style of stage coaches
Picture: The Motor Coach of Yesterday, **5**, 166

Motor Torpedo Boats. Together with Motor Gunboats these light craft, well armed and capable of moving at a high speed were employed on coastal defence work during the World War of 1939–45 and carried out raids on enemy shipping
Picture **8**, 16

Motte. An artificial mound on which the keep of the early castle was built, **3**, 95

Motto of Scotland. *Nemo me impune lacessit.* (No one provokes me with impunity)

Mouflon. Name of a variety of sheep found in Corsica and Sardinia. It is a horned animal

Mould-making or moulding is a term employed in a foundry where various articles are cast in metal, **6**, 49
Pictures **6**, 52, 53, 71

Mount Abu is on the south-western tip of the Aravalli Hills in Rajasthan It is 5,650 ft in height and is famous for its Jain temples, **3**, 325, 342 *et seq*

Mountain is the term used somewhat loosely to describe an elevated portion of the earth's crust. Generally speaking the term hill is used to describe elevations between 1,000 and 5,000 ft while mountain is used for those above that height Many elevations below 5,000 ft, however, are designated as mountains, **9**, 316
See also "Highest Mountains" *Atlas Supplement*, end of this Volume

Mountain and the Squirrel, The. A Poem by Ralph Waldo Emerson, **9**, 116

Mountain Ash. A flowering tree reaching a height of about 30 ft See *Rowan.*

Mountain Ash is a colliery town of Glamorganshire, some 18 miles from Cardiff.
The Welsh name is Aberpennar

Mountain Lion. See *Puma*

Mount Athos. See *Athos, Mount*

Mountbatten, Lt Philip See *Edinburgh, H.R.H. the Duke of*

Mountbatten, of Burma, Earl (born 1900) Entered Royal Navy in 1913 and became Supreme Allied Commander-in-Chief, S E Asia, after being Chief of Combined Operations in Second World War. Appointed Viceroy of India in succession to Lord Wavell and did good work in difficult transition period Made Earl August 1947, and became first Governor General of new Dominion of India Later, returned to active duty with the Navy as Rear-Admiral, **3**, 312

Mount Brussels is one of the heights of the Columbia Icefield in the Jasper National Park of the Canadian Rockies
Photo-tone Supplement Among the Canadian Rockies, **3**, *between* 160 and 161

Mount Buffalo National Park is in the Australian Alps, to the north-east of Melbourne, Victoria. It is a favourite winter sports resort, **3**, 234
Picture: **3**, 236

Mount Carmel. A ridge of high ground rising to 1,810 ft. above sea level immediately to the south-east

of the great Palestine port of Haifa, 4, 186

Mount Cook is the highest peak of the Southern Alps in the South Island of New Zealand. It rises to a height of over 12,000 ft., 3, 254
Picture: 3, 253
Photo-tone Supplement: From Volcanoes to the Southern Alps, 3, *between* 256 and 257

Mount Edith Cavell is in the Jasper National Park in Alberta, Canada. It is 11,033 ft. high.
Colour Plate. In Canada's Greatest National Park, 3, *facing* 196

Mount Egmont is in the North Island of New Zealand. Over 8,000 ft. high it has been described as " one of the world's most symmetrical mountains."
Picture: 3, 274
Photo-tone Supplement: From Volcanoes to the Southern Alps, 3, *between* 256 and 257

Mount Erebus, in Antarctica, is named after one of Sir James Ross's two exploring ships, 2, 366
Picture: 2, 366
Photo-tone Supplement: " The Volcano of Mount Erebus," 2, *between* 368 and 369

Mount Everest, 29,002 ft. in the Himalayas, is the highest peak in the world, 2, 389

Mounties. See *Royal Canadian Mounted Police.*

Mount Godwin-Austen, in the Himalayas, is 28,260 ft in height.

Mount Hamilton, California, U.S.A., is the site of the famous *Lick Observatory* (*q.v.*)

Mount Lamington. A volcano in New Guinea where violent eruptions occurred in 1951, 9, 316

Mount Lofty is the name given to a peak and to a range of hills of South Australia. Mount Lofty is 2,384 ft. high. The capital city of Adelaide is at the foot of the Mount Lofty range, 3, 204, 220

Mount Logan is the highest peak in Canada It is 19,539 ft. high and is situated in Yukon Territory

Mount Lyell is an important mining centre in Tasmania, Australia, 3, 236

Mount McKinley is a mighty peak in Alaska and the highest in North America. It is over 20,000 ft. high, 4, 294

Mount Merrick is a height in the southern uplands of Scotland reaching to 2,764 ft., 3, 110

Mount Moriah is a hill to the east of modern Jerusalem in the Holy Land Here the Great Temple of Solomon is supposed to have stood.
Picture: 4, 183

Mount of Olives is a sacred hill east of Jerusalem across the Valley of Jehoshaphat (Vale of Cedron). After the institution of the Lord's Supper " when they had sung an hymn, they went out into the Mount of Olives," *Matt.* xxvi, 30.
Photo-tone Supplement: Scenes in the Holy Land, 4, *between* 176 and 177

Mount Pelée. A volcano on the French island of Martinique in the West Indies, 3, 396

Mount Pleasant, in central London, is the chief Inland Section postal sorting office of the Metropolis. It is connected with the Post Office underground railway, 6, 284
Picture: 6, 285

Mount Royal, rises to a height of about 800 ft. The city of Montreal, Canada, is built on the lower part of this hill, 3, 184
Picture: 3, 186
Photo-tone Supplement: A Commercial Capital and its History, 3, *between* 160 and 161

Mount Rundle is one of the heights in the Banff National Park in the Canadian Rockies.
Picture: 3, 188
Photo-tone Supplement: For Scenery and Sport, 3, *between* 160 and 161

Mount Rushmore National Park. See *Rushmore, Mount.*

Mount St. Elias is a peak, over 18,000 ft. high, in southern Alaska, 4, 294

Mounts Bay is found on the south side of the western point of Cornwall. It contains Penzance, Newlyn and St Michael's Mount.

Mount Scopus is a hill at Jerusalem in the Holy Land and the site of the Hebrew University, 4, 183

Mount Sefton is one of the peaks in the Southern Alps of New Zealand.
Photo-tone Supplement: From Volcanoes to the Southern Alps, 3, *between* 256 and 257

Mount Tambourine is a beauty spot near Brisbane, the capital of Queensland, Australia, 3, 228

Mount Terror, in Antarctica, was named after one of Sir James Ross's two exploring ships, 2, 366

Mount Vernon, Virginia, was part of an estate inherited by George Washington, the first President of the United States. It was from Mount Vernon that Washington organised a force of colonists to protect the settled parts against Indian raids, 2, 195

Mount Wellington is in Tasmania, Australia, overlooking the State capital of Hobart. It is a favourite winter sports haunt, 3, 234
Picture: 3, 238

Mount Wilson. Name of a famous observatory in California established by the Carnegie Institution near Pasadena.
—its 100 in. reflector photographs stars of the twenty-first magnitude, of which there are at least a billion, 8, 174
Pictures: Tower Telescope, 8, 110
The Dome from the Tower, 8, 110
One of the World's Greatest Telescopes, 8, 111

Mourne, Mountains of. These are found in County Down, Ireland. The two highest peaks are Slieve Bingian and Slieve Donard.
Picture: 3, 147

Mouse. Name applied to small rodents of the *Muridae* family. The three British species are the House Mouse, the long-tailed Field Mouse (*q.v.*), and the Harvest Mouse (*q.v.*).
The House Mouse is found throughout the world; about 3 in. long, grey-brown fur, it makes a nest of paper and straw, 1, 137
See also *Mice, Fancy.*

Mouse-Ear Hawkweed is a wild plant bearing pale yellow flowers. The leaves are said to be like a mouse's ear.

Mouse, Hopping. See *Hopping Mouse.*

Mouse Tower, associated with Bishop Hatto (tenth century) is at Bingen, on the Rhine, 4, 70

Moville is a port of County Donegal, Eire. It is situated on the west bank of Lough Foyle and is a port of call for Atlantic liners, 3, 146

Mozambique. A Portuguese colony in Africa, also called Portuguese East Africa. It has a long coastline and is bordered by the Transvaal and Southern Rhodesia in the south and west. Its area is nearly 300,000 square miles. Lourenco Marques is the chief port and capital of the colony. Gold, silver, uranium, and asbestos have been found. Two great African rivers flow through the colony, the Limpopo (to the sea at Shai Shai) and the Zambezi (to the sea at Chinde), 2, 290, 3, 275; 4, 381

Mozart, Wolfgang Amadeus (1756–91). A musical prodigy who could play three instruments by the time he was twelve. He developed into one of the greatest composers and wrote much sacred music. His last work was the unfinished *Requiem.* He was born at Salzburg in Austria, 7, 164
Pictures. Mozart Playing in Paris, 7, 164
At the Point of Death, 7, 165

M.P. means Member of Parliament or Metropolitan Police.

Mpanda is a place in Tanganyika Territory, British East Africa, centrally situated south of the railway from Tabora to Ujiji. A railway is being built to Mpanda, which place is intended to be the development centre for the mineral resources of this region, 3, 374

m.p.h. means miles per hour.

M.P.S. means Member of the Pharmaceutical Society.

M.R.C.V.S. means Member of the Royal College of Veterinary Surgeons.

Mr. Nobody. A Poem by Anon., 9, 112

m.s.l. means, when used on maps and in geography, mean sea level.

MSS. means manuscripts (in the plural). Singular, MS.

M.T.B. Abbreviation for Motor Torpedo Boats (*q.v.*).

Mto Mtwara. This is the name of a new port built on the coast of Tanganyika Territory in connection with the East African Groundnuts Scheme.

Muang Thai means " land of the free people " and is a name given to their country by the Siamese, 4, 207

Muckross is the middle one of the three Lakes of Killarney.

Muda Hassim was the native ruler who received James Brooke at Sarawak, 2, 327

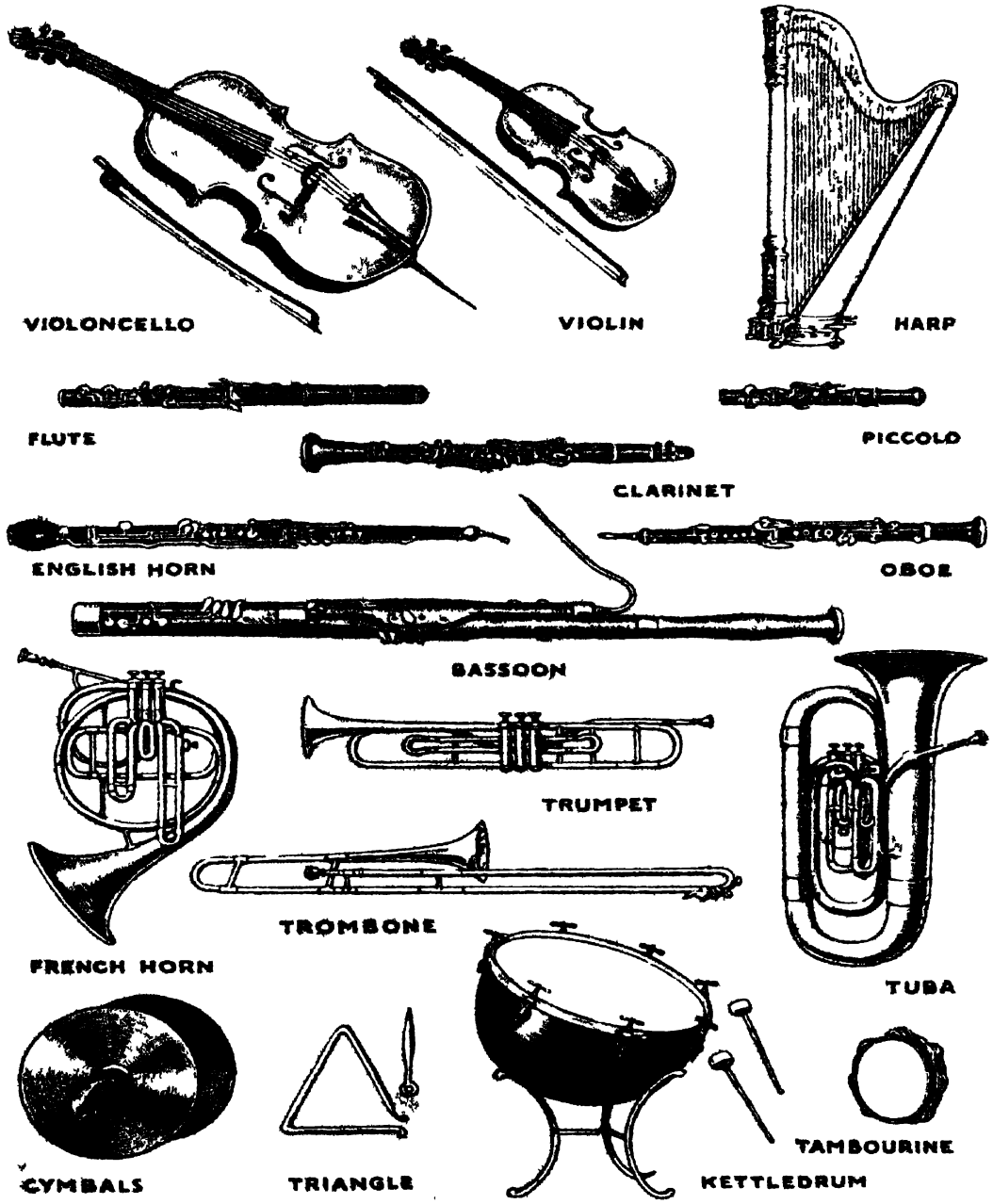
Mudawarra was a battle fought against the Turks by Lawrence of Arabia, 2, 386

Mud-Eels. Another name for *Sirens* (*q.v.*).

Mudfish, Australian. See *Australian Mudfish.*

Mudskipper is the name of a fish found in the waters of the Great Barrier Reef, off the Pacific coast of Queens-

IN THE MODERN ORCHESTRA



Specially drawn for this work.

Strings (violins, violas, 'cellos bass viols and harp) usually account for two thirds of the *musical instruments* (see p 257) used in the modern orchestra while nearly another third is divided between the wood winds (flutes piccolo clarinet oboes English horn bassoons) and the brasses (horns, trumpets, trombones and tuba) with percussion instruments (kettledrums tambourines, &c) as required by the orchestration

MUSIC: ITS STORY AND LANGUAGE

Music: In simple terms, music is the art of producing sounds in rhythmic succession which are pleasing to the ear or which stir the emotions. Not only does music possess great power to arouse emotion in the listener, but it can give intense pleasure to the singer or player. Its origins go back to the dimness of prehistoric times and to the simple chanting and drumming of primitive man.

Until medieval times the harmonic form of music, as we know it, was unknown, and music had remained in the melodic form, except perhaps for some extremely rudimentary attempts of the ancient Greeks. Melody is based on an arrangement of single musical notes following one another to make a tune. In harmony two or more notes of different pitch are sounded together at the same time, and a harmonic phrase is thus a succession of combinations of notes. In its more elementary melodic form, music (both vocal and instrumental) was used in the older civilisations for religious ceremonies, secular dances and festivals and in the home life. It was improved as time went on by the invention of new instruments and the introduction of "modes" or scales (particularly those of the ancient Greeks), and played a great part in Christian worship. It was not, however, until nearly 1,000 years of the Christian era had passed that the beginning of a revolutionary change made its appearance - the introduction of harmony.

At first this took the form of adding another "part" to a tune (doubling it) at an interval of four or five notes above or below it in pitch; this new "part" was in fact, as nearly as possible, the same tune in a different key. This was called "organum," and other similar devices known as the descant, the conductus, the rondel and the fauxbourdon were used. With what now seems slow progress these experiments at last gave rise to a tremendous step forward, the introduction of counterpoint or polyphony, in which each of two, three, four or more voices or instruments sing or play an independent melody, which fits in musically with the other "parts." It may be called "horizontal" harmony, to distinguish it from the "vertical" harmony which came later, and which consists of a succession of chords, the main interest being centred on one part (the tune), and the other parts forming an accompaniment, as for example in most of our familiar hymn tunes. Both these forms of harmony, greatly improved, are in use to-day.

A still surviving early harmonic composition which may perhaps be called a forerunner of counterpoint is the well-known "rondel" or round, "Sumer is icumen in," which was written by an English monk, John of Fornsete, between 1200 and 1250 A.D., and is thought to be technically two centuries ahead of its time. Another English composer—John Dunstable (who died in 1453) became famous both here and on the continent of Europe as the leading pioneer in the introduction of counterpoint, and two Flemish composers were active in the same direction at about the same period—Dufay (died 1474) and Josquin des Prés (1445–1521).

By the end of the fifteenth century counterpoint had become established, and its further development, particularly in our own country and in Italy, led to the "Golden Age" in music of the sixteenth century. Full honours must be given to English composers and musicians who were then pre-eminent, such as William Byrd (1542–1623), Christopher Tye (1500–83), Thomas Tallis (1510–85), Thomas Morley (1557–1602), John Dowland (1562–1628), Orlando Gibbons (1583–1625), Thomas Weelkes (died 1623), John Wilbye (1574–1638), and others. They were composers of choral music for church services, part-songs, motets and madrigals, and, to a lesser extent, of instrumental music. Great masters on the Continent in the Golden Age were the Italians Palestrina (1526–94), Marenzio (1560–1599), Andrea Gabrieli (1510–1586), and Giovanni Gabrieli (1557–1612), and the Spaniard Vittoria (1540–1613).

Since the sixteenth century there has been very great progress in music, due in large part to the establishment of the chromatic scale, the introduction of new forms of musical expression, and the freeing of the art of composition from unnecessary rules and restrictions. While the output of the simpler kind of songs, part songs and instrumental music has never failed, it has been accompanied by the composition of elaborate vocal and instrumental works. To-day cantatas, operas, sonatas, oratorios, symphonies, concertos, and other compositions are taken for granted, and new harmonic conceptions continue to arise.

Innumerable composers the world over have joined in the really remarkable advance in music during the last few centuries, but only the most prominent can be mentioned here. These are given below, arranged in alphabetical order in the period or periods in which they were active. The names in *italics* overlap into two periods.

About 1600–1700 Corelli, Frescobaldi, Lulli, Monteverdi, Purcell, Alessandro Scarlatti.

About 1700–50 *Arne*, Bach, Couperin, Handel, Rameau, Domenico Scarlatti.

About 1750–1800 *Arne*, *Beethoven*, *Cherubini*, Cimarosa, Gluck, Haydn, Mozart.

About 1800–50 *Beethoven*, Berlioz, *Cherubini*, Chopin, *Gounod*, *Liszt*, Mendelssohn, Rossini, Schubert, Schumann, Spohr, J. Strauss (elder), *Wagner*, Weber.

About 1850–1900 Bizet, Borodin, Brahms, Coleridge-Taylor, *Debussy*, Dvorak, *Elgar*, *German*, *Glazounov*, *Gounod*, Grieg, Lalo, *Liszt*, MacDowell, *Parry*, Rimsky-Korsakov, *Sibelius*, *Stanford*, J. Strauss (younger), *Richard Strauss*, Sullivan, Verdi, Tschaikovsky, *Wagner*.

About 1900 *to to-day* Bantock, Bartok, Bax, Berg, Bliss, Block, Boughton, Bridge, Britten, Coates, *Debussy*, Delius, *Elgar*, *German*, *Glazounov*, Grainger, Holst, Ireland, Milhaud, *Parry*, Poulenc, Prokofiev, Rachmaninoff, Ravel, Rawsthorne, Rubbra, Schonberg, Shepherd, Shostakovich, *Sibelius*, Ethel Smyth, *Stanford*, *Richard Strauss*, Stravinsky, Vaughan Williams, Walford Davies, Walton.

Particulars of the work and lives of many of the composers mentioned above will be found in *The Lives of the Great Composers*, 7, 157 *et seq*.

The art of music is fortunate in having a common written language which is in universal use, so that music composed in one country can be sung or played in another country without difficulty. The musical signs and abbreviations which are now in use are given below. The Italian language is used for the words needed, such as *forte*, *piano*, etc., which were first used in the seventeenth century, and their world-wide use to-day is a tribute to the part Italy has played in the development of music.

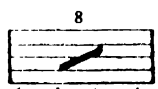
MUSICAL SIGNS AND ABBREVIATIONS

Signs denoting time or relative value of sound:

Breve. Semi-breve. Minim. Crotchet. Quaver. Semi-quaver. Demisemi-quaver.



Each of these notes represents twice the duration of sound of that which comes next in order. The sign to the right of each note indicates a rest or silence equal to its sound duration.



In time, the figure above a line drawn thus across the stave denotes the length of the pause in bars.

Accel. Accelerando. Gradually increasing the speed.

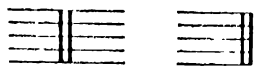
Adg° or *Ad°* Adagio. Slow: also name given to a slow movement or piece.

Ad lib. Ad libitum. Passages so marked may be rendered at the will of the performer.

And. Andante. Moderately slow: graceful; sometimes used as the name of a movement or separate piece.

Anim°. Animato. Animated : with soul
A tem. A tempo In time.


Bar.


Double Bars

Bar. A line drawn perpendicularly across the stave, separating the notes into measures of equal length, also the music comprised within two such lines. – *Double Bar* The former of the two signs is used to mark the larger divisions of a piece or movement, in psalm tunes, hymns, chants, etc, to mark the end of a verse or sentence The latter sign denotes the end of a composition.

Bind or Tie Placed over two or more notes in the same position on the stave, to show they are to be played as one

Breath-marks In vocal music, signs used to show where breath should be taken.

Denoting common time ; the former indicating four crochets to the bar, the latter two minims to the bar

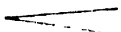
Cal Calando. Gradually slower, and with decreasing volume of tone


G or Treble Clef.


C, Alto and Tenor Clefs


F or Bass Clef

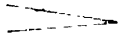
Clef The sign placed at the beginning of a stave, determining the absolute pitch of the notes that follow it


Crescendo Gradual increase of tone.

Dash When placed over or under a note, implies a very detached (*staccato*) style

D C. Da capo From the beginning, indicating that the performer must return to the beginning of the movement, and conclude at the double bar marked *Fine*

D S Dal segno. From the sign ; indicating that the performer must return to the sign


Decrescendo Gradually softer

Dim Diminuendo Gradual decrease of tone

( ) Dot. When added to a note or rest, lengthens it by one-half When placed over or under a note, means that its duration should be cut short

Flat The sign which lowers the pitch of a note one semitone.

Double Flat Used before a note already flat, lowering it another semitone. It is corrected by a flat and a natural.

f. Forte. Loudly : strongly.
ff. Fortissimo. Very loud.
fff. Fortissimo. As loud as possible.
f p Forte-piano. Loud, then soft
Leg. Legato. In a smooth and gliding manner
Lo. Loco Indicating to return to the proper pitch after having played an octave higher.
mf. or *mff.* Mezzo-forte. Moderately loud
mp. Mezzo-piano. Moderately soft
Manc. Mancando. Dying away, decreasing.
Marc. Marcato. In a marked manner, emphasised
M.M. Maelzel's metronome.

M.M. ♩ = 80. { Denoting that the beat of a crochet is equal to the pulse of the pendulum of Maelzel's metronome, with the weight set at 80.

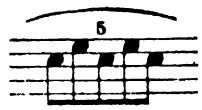
Natural. Restores a note, which has been raised by the sharp or lowered by the flat, to its original pitch

Ott., O^{va}, 8^{va} = Ottava. An octave—as 8^{va} *alta* = *ottava alta* (to be played) an octave higher ; 8^{va} *bas* = *ottava bassa*, an octave lower

p. Piano. Softly.
P F or *pf.* Piano-forte. Soft, then loud
pp. Pianissimo. Very soft.
ppp. Pianississimo. As softly as possible.

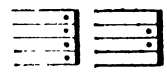
Pause or *Corona.* When placed over a note or rest, indicates that it must be held longer than its natural length When over a double bar, indicates where the piece is to be concluded after a repeat.

Pizz. Pizzicato. A direction to violinists to twang the string with the finger instead of using the bow.



Quintuplet. A group of five notes played in the time of four.

4^{tte} Quartette.
5^{tte} Quintette.
Raddol. Raddolcendo. Gradually softer and sweeter.
Rall Rallentando. Becoming gradually slower


Repeat When placed at the beginning and end of a passage or movement, indicates that the portion so marked is to be played over again.

Rit. Ritardando Retarding, holding back the time.

Segno The sign as *Al Segno*, to the sign, *Dal Segno*, from the sign

Sem, *Semp* Sempre. Always, throughout –as *sempre legato*, smooth throughout ; *sempre ritardando*, continually slackening the time.

7^{tte} Septet.
6^{tte} Sextet, or Sestet.

Sforzando. Denoting emphasis applied to a particular note or notes. Abbreviated *sf*, *f*, *sfz*.

Sforzato-piano A sudden *forte* followed by a *diminuendo* or *piano*. Abbreviated *sfp*, *sfz p*.

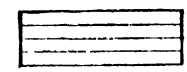
Sharp The sign which raises the pitch of a note one semitone

Double Sharp Used before a note already sharp, raising the pitch by a semitone. It is contradicted by a natural and a sharp

Slur. Showing that the notes over which it is placed must be played in a smooth (*legato*) manner
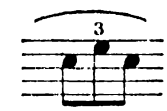
Sos, *Sost* Sostenuto. Sustained, prolonging the tone for the full duration of time indicated

Spir. Spiritoso In a spirited or lively manner.


Stave or Staff The horizontal and parallel lines on which the notes are placed, used to indicate their relative position as regards pitch

Trem Tremolando With trembling or wavering ; a note or chord played with great rapidity so as to produce such an effect.

3°. Trio.



Triplet. A group of three notes performed in the time of two

T.S. Tasto solo. One key alone : a direction to play a part in unison

land, Australia It likes to climb the roots of mangrove trees, 1, 218; 3, 230

Muglak, Mohammed. See *Mohammed Muglak.*

Mugwort. A common plant with yellowish-red blossom buds that grow as sprays.
—as a plant used for making medicines, 1, 333

Mukden is the capital of the Chinese province of Liaoning which is one of the nine provinces of Manchuria. Mukden is also known as Shenyang, 4, 243

Mulberries are fruits of raspberry-like form but black. There are several varieties of mulberry trees, the heart-shaped leaves of which are used for feeding silkworms.

Mulberry. Code name given to the steel, concrete, etc., erections used to form artificial harbours on the French coast during the Allied Invasion in 1944, 2, 254, 7, 394
Picture. A "Mulberry" Port on the Normandy Coast, 7, 395

Mulberry Garden. A plantation established in London during the reign of James I, in an effort to raise an industry in silk.
The Duke of Buckingham, who built Buckingham Palace, was Keeper of the Mulberry Garden

Mulch, a term used by gardeners for a top-dressing of the soil surface with a light layer of manure, peat, lawn mowings, etc., with the object of keeping the earth moist and the roots cool.

Mule. An animal having a donkey as its father and a mare as its mother, 1, 95

Mule. A spinning machine as found in a cotton mill. It may be 200 feet in length, 6, 338

Muleteer. The man in charge of a convoy of pack mules, 1, 95

Mulga. A tree growing in Western Australia the roots of which traverse the ground 80 ft. deep, 1, 276

Mulhacen is the highest peak in the Sierra Nevada Mountains of Spain. It is over 11,000 ft. in height.

Mull is an island of the Hebrides on the west coast of Scotland. Its principal town is Tobermory, 3, 139

Mullein, Great. See *Great Mullein.*

Mullet. A fish belonging to either of two species, the red mullet and the grey mullet.
The first was regarded as a great delicacy by wealthy Romans, and is still in high favour among epicures.

Mullion is the name of a village near the Lizard Point of Cornwall. It is associated with Mullion Cove and Mullion Island.
Picture: 3, 51

Mulock, Dinah Maria (1826-87). Beginning as a writer for girls and boys, she afterwards wrote the famous *John Halifax, Gentleman.*

Multan is a district of the Punjab, in the Dominion of Pakistan. Its capital, of the same name, is a great commercial centre. Carpets and cotton are manufactured.

Mumbles. A town and popular seaside resort of Glamorganshire, South Wales. The place stands on Swansea Bay and is also known as Oystermouth.

Mumbo Jumbo. Name of a spirit worshipped by African natives. The term is often applied to any object of foolish superstition.

Mummy comes from the Egyptian word "mumyer," meaning bitumen, which was used by the ancient Egyptians for embalming their dead, 9, 9

Mumtaz Mahal was the name of the queen of Shah Jehan to whose memory the Taj Mahal was erected The name means Crown of the Palace, 3, 328
Picture. 3, 327

Munchausen, Karl Friedrich, Baron (1720-97). A German soldier who told such marvellous stories that his name has become a byword for exaggeration.

Mundaring Weir is situated in the Darling Range of Western Australia about 25 miles from Perth It holds back water for the Western Australian goldfields, especially the "Golden Mile." Plans have been made to treble its capacity, 3, 213

Mungoswell's Wheat. A branching and prolific form of wheat discovered by a Scots farmer, 1, 377

Munich is the chief town of the state of Bavaria in southern Germany and is the old capital of the former kingdom of Bavaria. The city was severely damaged during the Second World War, 4, 79

Municipal Corporations Act (1835), provided for the government of boroughs by Town Councils elected by popular vote, 2, 212

Munitions. Military or naval stores or equipment of any kind. The word covers cannon, rifles, ammunition, aeroplanes, tents, tanks, wagons and the many other things needed by a fighting force

Munnings, Sir Alfred J (born 1878) British artist famous for his pictures of horses and country scenes. He was elected A.R.A in 1919, R.A. in 1925 and President of the Royal Academy 1944, resigning in 1949.
Photo-tone Supplement: Kilkenny Horse Fair, 7, *between* 112 and 113

Munster is a province of Eire. It comprises the following counties. Clare, Tipperary, Kerry, Limerick, Cork and Waterford.
—the Kings of Munster were associated with *Cashel* (*q.v.*).

Muntjac. Small deer found in India, Burma, Malaya, etc. The animals have miniature antlers.

Murdoch (or Murdock), William (1754-1839). Son of an Ayrshire farmer, he produced a steam locomotive while in charge of a mining engine in Cornwall.
Using a kettle as a retort, he found out how to use coal-gas as an illuminant, 6, 15

Murillo, Bartolome (1617-82). One of the most brilliant of Spanish painters, 7, 60
Pictures: The Loaves and Fishes, 7, 55
The Melon-Eaters, 7, 58
St. John and the Lamb, 7, 59

Murmansk. Seaport of the Soviet Union. It lies between Norway and the White Sea and has considerable fishery trade. It is the only port on the Arctic coast of Russia which is ice-free the whole year round and was much used by British ships taking supplies to Russia during the Second World War.

Murray, Gilbert (born 1866). Classical scholar and distinguished writer. Born in Sydney, Australia, he came to England in 1877; became professor of Greek at Glasgow University 1888-1899, and at Oxford 1908-1936. He received the O.M. 1941.

Murray, Sir John (1841-1914). British biologist and geographer. Son of a Scots accountant, he was born in Ontario. Edited in fifty volumes the results of the *Challenger* expedition (1872-76), being naturalist to the expedition.

Murray. This great river of Australia is some 1,300 miles in length. It rises in the Australian Alps and has on its course, near Albury, the largest water reservoir in the southern hemisphere, 3, 213; 4, 394; 5, 84
—it was discovered by Sturt, 3, 204
Picture Harnessing the Murray River, 3, 211
The Upper Murray Valley, 3, 229
Water for the Dry Lands, 5, 81
Pictorial Map. 3, 243

Murren is a small town of Switzerland, situated in the Bernese Alps, 4, 62

Murrumbidgee is the name of a river of New South Wales, Australia. It is about 1,300 miles in length and is famous for the Burrinjack Dam, by means of which barren lands are irrigated, 3, 213; 5, 84

Muscat and Oman. A state of eastern Arabia ruled by a Sultan. It has a fertile coastal plain known as the Batinah which yields renowned dates, 4, 205

Muscles in our bodies remain inactive when not at work, but can, when required, increase their thickness and lessen their length. A muscle cannot push, but it shortens itself and pulls. The material of which our muscles are made, is composed of cells, and is called "muscle tissue." The cells are packed closely together, and some are bound in fibrous sheaths, 8, 209, 212
Picture: 8, 214

Museum. A building in which collections are housed to give instruction to visitors. In London there are museums of many kinds, besides the British Museum (*q.v.*).
Chief among them are the Natural History and Science Museums at South Kensington, which are really part of the British Museum, and the Geological Museum, also in South Kensington.

Mushet, David. An expert on steel production, he completed the work Bessemer had begun, 6, 59

Mushrabia is the name given to the intricate carved woodwork which decorates the screens seen on the old houses of Cairo.
Picture: 4, 196

Mushrooms form one variety of an enormous family of fungi, 1, 359
Picture: 1, 359

Music. See p. 254

Musical Instruments fall into one of three classes—the stringed, the wind, and the percussion instruments. The main instruments in the first class are the harp, the violin and its relatives, and the piano. The wind instruments include the brass bugles, trumpets, saxhorns, trombones and the organ, as well as the wood-wind flutes of various kinds, the clarinets, oboes and so on. To the third class (percussion instruments) belong the drums, cymbals and tambourines. Descriptions of the various instruments are given in this Index under their separate names. See also *Orchestra*.
Pictures: Musical Instruments, Old and New, **10**, 249
In the Modern Orchestra, **10**, 253
Musical Signs and Abbreviations. See pp. 254-5

Musk. The mimulus plant, sometimes known as the monkey flower.

Musk Deer. An animal about 3 ft. in height found in Central Asia. The males have a gland from which a musky perfume is manufactured.

Musk Ox. An animal that roams in the Arctic regions, so named from the musky smell of its flesh. It has brown hair and the males are horned.

Muslin. A light cotton fabric known in England for nearly three centuries. It was introduced from the East.

Musquash, also known as the Musk Rat, is a rodent animal found in parts of Canada. About 12 in. in length, without the tail, it is trapped for its fur, **3**, 165
Pictures: **3**, 165; **10**, 237

Mussel. A bivalve mollusc, of which there are both sea and fresh water varieties, **1**, 227
Pictures A Fossil Shell, **1**, 11
Mussels in a Breakwater, **1**, 227
Colour Plate: British Shells, **6**, *facing* 397

Musselburgh is a town of Midlothian, Scotland, on the Firth of Forth. It is close to Edinburgh.

Mussolini, Benito (1883-1945). Son of a blacksmith. In 1919 he started the Italian Fascist movement which eventually carried him to power as dictator of Italy. His dreams of a second Roman Empire led to such things as the brutal conquest of Abyssinia. He joined Hitler in the Second World War at the time France was facing defeat, but lost all power with Italy's downfall in 1943. He was killed two years later by Italian partisans, **2**, 242, 245, 250, 412; **4**, 157

Mussorgsky, Modest Petrovitch (1835-81). Notable Russian musical composer, **7**, 187

Mussulmans is the Turkish name for a Mohammedan, *i.e.*, one who is a follower of the religion of Mohammed.

Mustangs are the horses which once roamed the American prairies and pampas. They were introduced by Spanish navigators, **1**, 92

Mustapha Kemel Bey, the founder of modern Turkey. See *Kemel Ataturk*.

Mustard as used at table is made from the seeds of the mustard plant ground finely and mixed with other ingredients. The plant is an annual much cultivated for its seeds near Norwich where there are mustard factories, **3**, 64

Mustard and Cress form useful salad crops. When needed for use together mustard is sown three days after the cress.

Mustering is the word Australians use to describe the process of rounding up their herds.
Picture. **3**, 209

Mutiny, Indian. See *Indian Mutiny*.

Mwanza. A port on Lake Victoria linked by railway to Dar es Salaam, **3**, 370

Mweru Lake. See *Moeru*

Mycale, on the western shore of Asia Minor. Here the Greeks won a great victory over the Persians, 479 B.C., **2**, 34

Mycenae is in Greece, in the Morea to the north of Nauplia. Among the most famous relics of this ancient centre of civilisation is the Lion Gate, **2**, 402; **7**, 280

Mycology is a department of the science of botany. It deals with the study of mushrooms and other fungi.

Myddelton, Sir Hugh (*c.* 1560-1631) was a wealthy London merchant who in 1609 put a plan before the City Corporation for making a "new river" to bring water from the River Ware. The scheme was successfully carried out. The "Hugh Myddelton" school in the heart of London is named after this merchant, **6**, 240; **9**, 411

Mygale Spider. A creature 7 in. across and large enough to eat small birds. It is found in the tropics.
Picture: **1**, 247

Myitkyina is a place of northern Burma through which the Ledo road into China was built. It is linked by railway to Mandalay, **4**, 216

Mylodon is the name of an extinct animal of the ground sloth family that once lived on the American continent. It was as large as a rhinoceros.

Mynydd Bach. This is the name of a mountain block of West Wales overlooking Cardigan Bay, **3**, 102

Myosotis. Family name of the plant forget-me-not (*q.v.*).

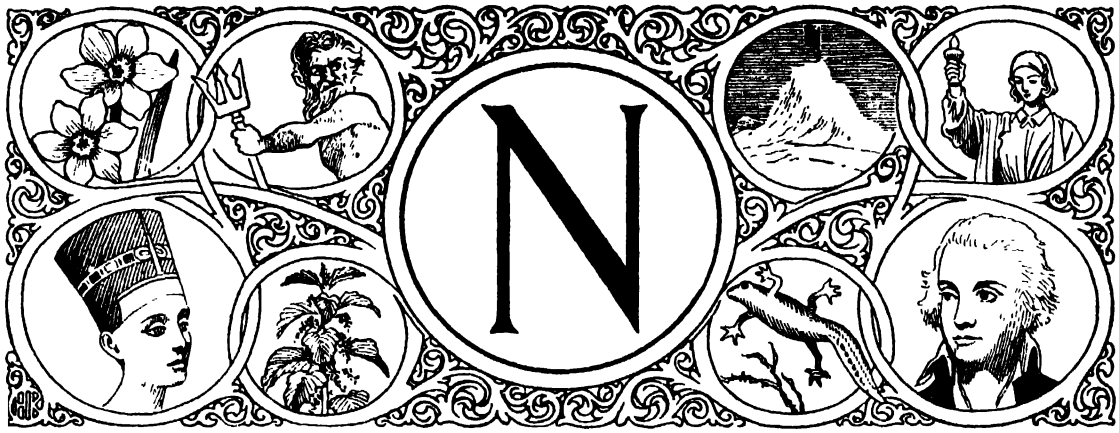
Myriad means ten thousand, or a huge number.

Myrrh is the name of a gum obtained from the juices of various plants, particularly from the balsam, **1**, 334

Mysore is a princely state in the southern part of the Dominion of India, between Madras and Bombay. It yields cotton, rice and many other crops. The capital is a city of the same name.

Mystic. Having some hidden meaning; mysterious. A mystic (*noun*) is a person claiming to possess some inner knowledge due to direct touch with God, and not to reasoning or observation.

Mythology is the term used for the old stories of the earlier peoples of the world, generally dealing with the origin of the Universe and the superhuman beings who control ordinary men. A story current among the ancient Greeks or Romans about a god or goddess is called a myth.
Greek religion was based largely on the mythology of the people: that is, on the whole body of myths taken together. Some of the stories which have come down to us from the ancient Greeks and the Norse are included in *Fable, Myth and Legend*, **5**, 333-382



N is the fourteenth letter of our alphabet. It is called a nasal-dental letter because both the nose and the teeth are used in sounding it. Like L, M and R, it is also a liquid, and able to make a syllable by itself, as in "often," pronounced of'n. When N comes at the end of a word, after M, as in "condemn" and "hymn," it is silent.

N is the chemist's symbol for nitrogen; and in mathematics signifies an indefinite number. We use it as an abbreviation for New in N.Z. (New Zealand), and N.T. (New Testament); and for North in maps and on compasses.

Naafi. Abbreviation for Navy, Army and Air Force Institutes, an association which provides canteens for H.M. Forces at home and overseas.

Naas. An ancient and historical town of Eire, situated in County Kildare.

Nabob. A governor or ruler in India. The title was also given to persons of wealth. It is a corruption of the Hindustani Nawab.

Nabob of Bengal. He marched on Calcutta and imprisoned 145 men and one woman in a small room— the infamous "Black Hole," **2**, 185

Nagasaki was a great seaport and industrial centre of the Japanese island of Kiushiu. It was almost completely destroyed by the second atomic bomb in August 1945, **2**, 257; **4**, 258

Nagoya is a place in Japan famous for its many-storeyed castle.
Picture: **4**, 257

Nagpur is a district of the Central Provinces of the Dominion of India and is the name of the chief town of that district; this town is a cotton manufacturing centre and an important railway junction, **3**, 323

Nahuel Huapi National Park is a beauty spot in the southern lakes country of Argentina, **4**, 331

Naiads, in the myths of the Greeks, are nymphs of fountains and streams.

Nairn, a seaport and great touring centre, the county town of Nairnshire. It stands on the Moray Firth and was once known as Invernairn.

Nairne, Carolina Baroness (1766–1845). Great Scottish song-writer, she gave to the world *Caller Herrin', Will ye no come back again?* and many other lyrics.

Nairnshire. A county of Northern Scotland through which flow the Rivers Findhorn and Nairn. Its interests are mainly agricultural, but it has also a fishing industry.

Nairobi is the capital of Kenya Colony. It is a railway and commercial centre, 5,000 ft. above sea level. It was the first town in the British Colonial Empire to become a city by Royal Charter, **3**, 370
Picture: **3**, 371

Namaqualand is a country of South-West Africa. It is inhabited by a race known as the Namas, but has a few white settlers and some Hottentots.

Namur is one of the provinces of Belgium. It has as its capital a town of the same name, **4**, 24

Nanak (born 1469) was the founder of the Sikh religion of India, **3**, 338

Nancy is an important and historical town of France. It is the capital of the Meurthe-et-Moselle department and has textile industries.

Nandi is the sacred bull of the Hindu religion, **3**, 359

Nanking, on the Yangtse River, was the capital of China from 1928 to 1949. It is a city of great antiquity, **4**, 242
Pictures: Scenes in Nanking, **4**, 235

Nansen, Fridtjof (1861–1930). Famous Norwegian explorer, the first man to penetrate Greenland from coast to coast. **2**, 356 *et seq.*
Pictures: The Fram, **2**, 355
At Supper in the Fram, **2**, 356
Nansen Takes a Walk, **2**, 356
Scott-Hansen's Observatory, **2**, 357
Sunday Afternoon on the Fram, **2**, 357
Fridtjof Nansen, **2**, 359
A Ship of the Antarctic, **2**, 371

Nantes, standing on the River Loire, is a large French town with sugar refineries and other industries.

Nantes, Edict of, was signed by Henry IV at Nantes in 1598. It gave recognition and legal status to the Protestant Huguenots. It was revoked by Louis XIV in 1685. Thereupon, about 400,000 Huguenots took refuge in Britain or Holland. The rise of the textile industries in England dates from the influx of these skilled and industrious workers.

Nant Francon is one of the famous passes of Snowdonia, North Wales, **3**, 106

Nantwich. One of the Cheshire salt towns. It also makes boots and shoes, **3**, 76

Nap. The soft surface of a woven fabric, composed of projecting hairs or fibres. When the nap has worn off a cloth and the separate threads are visible, the cloth is said to be threadbare.

Nape means the back of the neck; the part immediately below the hair.

Naphtha is a very inflammable liquid obtained from petroleum, coal-tar, shale-oil or wood by distilling it. Methylated spirit contains a small proportion of naphtha.
Naphthas are useful for dissolving gums and resins and for burning in "spirit" stoves.

Naphthalene. A hard, white, crystalline substance derived from coal-tar. It emits a strong, but not unpleasant, smell and is commonly employed for protecting stored fabrics from the ravages of clothes-moths, **6**, 18

Napier is a seaport of North Island, New Zealand. It exports meat, **3**, 263

Napier, John (1550–1617). A Scots inventor. He discovered the system of logarithms which made easier many exercises in arithmetic.

Naples is a famous town of Italy on the bay of the same name. It is a great business centre and Italy's second port, a favourite place for tourists because of the many historic sights to be seen, **4**, 152
Photo-tone Supplement: Seaports Old and New, **4**, *between* 112 and 113

Naples, Bay of. Situated at the south-west of Italy, the bay faces the Mediterranean. Vesuvius is in the background and there are many towns along the shores of the bay.
—a Roman temple, **1**, 2
Picture: Vesuvius, **1**, 45

Naples of the South is a name sometimes given to the city of Auckland, in New Zealand, **3**, 270

Napoleon. Name of a gold coin of France valued at 20 francs. First minted by Napoleon, it is no longer issued.

Napoleon was the name of three French

Emperors, though only two of them actually ruled in France, **9**, 326

Napoleon Bonaparte (1769–1821) Born in Corsica, Napoleon came to be known as the man who mastered Europe. He was eventually defeated and sent in exile to the lonely island of St Helena, **2**, 197 *et seq.*, 409 *et seq* ; **4**, 10, 56, 123, 148

—Napoleon at St. Helena, **3**, 394

—his tomb in Paris, **4**, 12

—his roads over the Alps, **5**, 36

Pictures; **2**, 202, 205, 206, 207
Longwood House, **3**, 393
Held against Napoleon, **4**, 22
The Lion of Waterloo, **4**, 23

Napoleon III (1808–73). Emperor of France and the third son of Louis Bonaparte, brother of Napoleon Bonaparte. He was deposed in 1871 and lived at Chislehurst, in England, **4**, 150, 298

Napoleonic War (1803–15) was virtually a continuation of the Revolutionary War (*q.v.*), and was fought to prevent Europe from becoming the Empire of Napoleon (*q.v.*), **2**, 198 *et seq.*, 410

Nara, on the Island of Honshiu, was capital of Japan in the eighth century. It is famous for its ruined palaces and temples, **4**, 258

Narcissus is a bulbous plant of daffodil type that bears white flowers. (*p.h.*)
Picture: Daffodils and Narcissi, **8**, 279

Narcotic. Something which will induce sleep. A narcotic drug or sleeping draught is made from the roots of the coco-nut palm, **1**, 310

Narva. A river of Russia which runs into the Gulf of Finland through Estonia at the town of the same name. Its waters are harnessed to provide hydro-electric power, **4**, 52

Narvik is a seaport of Norway which remains open through the winter. A centre for the shipping of iron-ore, it was captured by the Germans in 1940, and heavy fighting took place in the neighbourhood in April and May 1940, **4**, 38

Narwhal, an animal of the whale family with one large spirally fluted tusk, 6–10 ft. long.

Naseby. A village a few miles from Market Harborough. Here was fought the battle of that name (1645), in which Cromwell defeated the Royalist Army under Charles I, **2**, 162
Picture: **2**, 161

Nash, John (1752–1835). British architect who laid out Regent's Park, repaired and enlarged Buckingham Palace, and designed Marble Arch and Regent Street.
Pictures: Buckingham Palace, **3**, 7
Regent Street, **3**, 20

Nash, John Northcote (born 1893). Well-known British artist, he painted many pictures for the Imperial War Museum. He was elected A.R.A. in 1940, **7**, 117
Photo-tone Supplement: Winter Landscape, **7**, *between* 112 and 113

Nash, Paul (1889–1946). Well-known British artist, his pictures render nature in its most delicate colours, **7**, 117
Picture: **7**, 112

Nash, Richard (1674–1762). One of the leaders of fashion, and a great dandy, and for this reason was known as "Beau Nash."
He was master of ceremonies at Bath, **2**, 208; **3**, 26
Picture: **2**, 208

Nash, Thomas (1567–1601). English writer, poet and dramatist.
Poem: Spring, **9**, 97

Nashville, a busy industrial and commercial centre, is capital of the State of Tennessee, U.S.A.

Nasik is a district of Bombay, in the Dominion of India. Its capital is of the same name and ranks as a sacred city, second only to Benares, **3**, 324

Nasmyth, James (1808–90). A Scotsman, he invented the famous power hammer that bears his name. As a boy he made many models, **9**, 226

Nassau. Capital of the Bahamas in the British West Indies. It is a favourite holiday resort, especially for Americans and Canadians, **3**, 398
Picture: The Sponge Fleet in Harbour, **3**, 399

Nasturtium. Popular hardy annual plant. There are climbing and dwarf varieties. Family name Tropæolum, **8**, 278

Natal. A province of the Union of South Africa, so named because it was discovered by Vasco da Gama on Christmas Day, *i.e.*, the natal day of Christ, **2**, 289; **3**, 303 *et seq.*
Picture: **2**, 290
The main industry is agriculture, and there are huge sugar-cane plantations near the coast. Natal has considerable mineral wealth, especially coal. The provincial capital is Pietermaritzburg, **3**, 286, 303 *et seq.*

—Cecil Rhodes in Natal, **2**, 219
Pictures: The Ricksha "Boy," **3**, 304
Durban, **3**, 305
"Valley of a Thousand Hills," **3**, 305
Wonderful Howick Falls, **3**, 309
Drakensberg Mountains, **3**, 310

National Debt. This is the debt incurred by the government of a country and owed by them to people either in that country or elsewhere. In this country the National Debt is really represented by Consols, War Loan Stock, National Defence Bonds, National Savings, etc. The heavy cost of wars is mainly responsible for the National Debt in most countries, **9**, 356

National Fire Service, generally known as the N.F.S. was formed during the Second World War to bring all fire-fighting services into one organisation. From April 1st, 1948, the N.F.S. ceased to exist and the different brigades became controlled by the local authorities once again. A description of some of the tasks they faced, 1939-45 is given in *Their Finest Hour*, **2**, 393 *et seq.*

—Work and training in peace time, see *With the Fire Fighters*, **6**, 253 *et seq.*
Picture: While the Fires Rage, **2**, 399

National Gallery in London contains a collection of pictures belonging to the nation and is regarded as one of the most representative art galleries in the world. It was begun in 1924 when the British Government purchased the Angerstein collection. The building stands in Trafalgar Square.
Picture: **3**, 18

National Government was formed in 1931 to meet the economic and financial crisis of that year. It was so named because all the major British political parties were represented in it, **2**, 412

National Health Service. This service was set up in Britain by order of an Act of Parliament which came into force on 5th July, 1948. Under this service, and by virtue of the weekly contributions which they pay (up to the age of 65), people are entitled to medical advice and treatment.
This includes medicines, nursing, hospital treatment and the like. Persons over the age of 65 (or 70, if they work to that age) are entitled to treatment, but pay no contribution, **2**, 415

National Parks are a feature of Canada. Here vast tracts of territory are preserved in a natural state, stocked with bison and other native animals.
Wainwright, Jasper, Banff and Wood Buffalo Park are examples, **3**, 192
Pictures: A "Mountie" in the Wonderland of the Rockies, **3**, 159
Vermillion Lake, **3**, 188
Athabaska Glacier, **3**, 188
The Majestic Beauty of Banff, **3**, 193
Golf Course, Jasper Park Lodge, **3**, 191
Colour Plate: In Canada's Greatest National Park, **3**, *facing* 196
Under the National Parks Commission, set up in 1949, areas of outstanding natural beauty in Britain are being designated as National Parks.
Picture: Pembrokeshire Coast National Park, **3**, 100

National Physical Laboratory is part of the Department of Scientific and Industrial Research founded by the British Government, **7**, 411

National Trust, The. The full title of this organisation is the National Trust for Places of Historic Interest or Natural Beauty, and as this name suggests it was founded in 1895 to preserve the ancient monuments and beauty spots of Britain. It is not a Government body, but is an organisation which gets its money from private gifts and from membership subscriptions. This money is used to preserve stretches of beautiful countryside or fine old houses and castles for the nation. Many historic houses have been handed to the Trust while in other cases the Trust has itself purchased property or lands. See *These are Our Heritage*, **3**, 405 *et seq.*

National War Memorial, Scottish. See *Scottish National War Memorial.*

Nations, Battle of (1813). This battle was fought near Leipzig in Germany and resulted in the utter defeat of Napoleon's "Grand Army" by the armies of Prussia, Austria, and Russia, **2**, 205; **4**, 76

Native Rulers and Peoples. Postage stamps containing pictures of rulers and peoples.
Pictures: **4**, 399

Nativity, Church of. A sacred structure reared over the spot where Christ was born at Bethlehem.
Picture: **4**, 181

Photo-tone Supplement: Scenes in the Holy Land, 4, *between* 176 and 177

N.A.T.O. stands for North Atlantic Treaty Organisation founded in 1949. The members are Belgium, Canada, Denmark, France, Iceland, Italy, Luxembourg, Netherlands, Norway, Portugal, United Kingdom and U.S.A.

Natterjack. A small, greenish-yellow toad with a golden line down its back, 1, 157

Natural Gas is found in some parts of the world, especially in Canada, in the oil regions. Some of it is used as a supply for cities, 3, 180

Natural History. A general term which at one time covered the study of all natural objects, but is now usually narrowed down to include botany and zoology only, and is used generally for the more popular side of these two subjects, flowers, trees, birds, creatures of the woodlands, etc., as distinct from the purely scientific side. Geology is also included in the ground covered by many Natural History Clubs, 1, 47 *et seq*, 9, 362 *et seq*

See also *Botany, Geology, Zoology.*

—Notable nature stories, 7, 229; *Books for Boys and Girls*, 7, 276

Natural History Museum, London See *South Kensington*

Naturalise. To accustom (something) to new surroundings and conditions. The pheasant is an Asiatic bird which has been naturalised in Britain.

A person is said to naturalise himself if he formally becomes a subject of a government under which he was not born, so changing his nationality, 9, 338

Naturalised Bulbs. When bulbs, such as those of daffodils and bluebells, are planted in the garden and left undisturbed for several years they are said to be naturalised.

Naturalist's Voyage in H.M.S. Beagle, A. The title of Charles Darwin's great work, first published in 1839, 2, 347

Nauru. A Commonwealth island of the Pacific administered under United Nations trusteeship by Australia It has large deposits of phosphate rock, 3, 391

Nautical Almanack, The. A British publication containing information about the stars and planets for the use of sailors, 8, 158

Nautilus. See *Argonaut.*

Navajo. The name of a tribe of North American Indians. There is a Navajo Indian Reservation in Utah, on the Arizona Border.

Picture: 4, 294

Naval Training College. Once partly at Osborne, Isle of Wight and partly at Dartmouth, it is now entirely at Dartmouth, 2, 243, 266

Navarino, Battle of (1827). This naval battle of the eastern Mediterranean resulted in the complete destruction of the Turkish fleet by combined British, French, and Russian forces. The effect of this was that Turkey acknowledged the independence of Greece, 4, 157

Navarre was once a kingdom of Europe Parts of it now form a large province in the north of Spain and this includes a portion of the Pyrenees. The capital of the province is **Pamplona.**

The inhabitants of the province are known as Navarrese, 4, 135

Navigation Acts. These compelled colonists to export and import goods only through England and in English or colonial ships. The Acts were among the complaints of the American colonists which led to the War of Independence (1775–83), 2, 191

Navigator. A person who directs the course of a ship, airship or aeroplane. A navigator does not usually do the actual steering, but makes observations and gives instructions for keeping on the correct course.

Navigator, The. Title given to Prince Henry of Portugal, who encouraged early navigation and exploration.

See *Henry of Portugal, Prince.*

Navy, Merchant. See *Merchant Navy.*

Navy, Royal. The history of the British Navy goes back to the long ships of King Alfred (848–900). Henry VII and Henry VIII laid the foundations of the modern Service and in Queen Elizabeth's reign, under Admirals and Captains such as Lord Howard of Effingham, Hawkins, Drake and Frobisher, the Navy achieved one of its most famous victories against the Spanish Armada and ensured the freedom of the seas. It has passed through many transformations but remains today Britain's mighty weapon of defence. See *Records of the Royal Navy*, 8, 1 *et seq.*; 9, 374

Colour Plates: Drake Destroys the Spanish Fleet at Cadiz, 8, *facing* 36

A Naval Incident, 8, *facing* 44

Nelson's Famous Signal before Trafalgar, 8, *facing* 45

Britain's Largest Battleship, H.M.S *Vanguard*, 8, *facing* 64

Photo-tone Supplement: Guardians of the Seas, 8, *between* 96 and 97

Naxos is a Greek island of the Ægean. Emery, used for making grinding wheels, is its chief product, 4, 362

Nazareth is a town in the Galilee district of the Holy Land or Palestine. It was the home of Jesus.

Naze, The. A promontory of the Essex coast to the south of Harwich.

Nazi Movement. See *N.S.D.A.P.*

N.B. means *Nota bene, i.e.*, note well.

N.C.O. means non-commissioned officer.

Neanderthal Man, a very early type of European man belonging to the fourth or last Glacial Age (about 50,000 years ago).

Named after a skeleton found in 1856 in the Neanderthal, near Dusseldorf Germany.

Neap Tides are those which reach the lowest high-water mark, the high tides being known as spring tides. Neap tides are those which immediately follow the first and third quarters of the moon, 5, 27

Neath is a town and port of Glamorganshire, a centre of the tinplate and other heavy industries.

Neat's Foot. Term applied to the foot of a calf.

Nebraska is one of the Central States of the U.S.A. It is one of the most important farming states and is interested in stock-raising and meat-packing, growing maize and other valuable crops. Capital, Lincoln.

Pictorial Map: 4, 290

Nebuchadnezzar was the name given to three of the kings of ancient Babylon. The Nebuchadnezzar of the Bible ruled from 604 to 561 B.C. He conquered the Kingdom of Judah and took many Hebrews as captives to Babylon. He largely rebuilt Babylon and constructed the famous Hanging Gardens there, 9, 14

Picture: The Hanging Gardens, 7, 289

Nebulæ is the term used by astronomers to define misty patches of light or "little clouds" seen in the sky through a telescope. Some of them are composed of glowing gas, 8, 177

Pictures: An Island Universe, 8, 170

The Great Nebula in Orion, 8, 171

A Ring Nebula, 8, 174

The "Bridal Veil" Nebula, 8, 176

Neckar is a river of Southern Germany It comes from the Black Forest and empties into the Rhine, 4, 70

Necropolis is the name of the city of the dead or burial ground in which the people of ancient Egypt were laid to rest, 4, 196

Nectar. A substance honey bees collect from flowers to form their food, 1, 259

Nectarines are fruits of the peach type having smooth skins.

Needham Market. A small market town in Suffolk, 3, 62

Needles used to be made of bone, ivory, wood and bronze Steel needles were first introduced into England in Queen Elizabeth's time. Modern needles are shaped out of lengths of steel wire, pointed, eyed and polished by machinery

Needles, The. Rocks of chalk at the westernmost end of the Isle of Wight, near Alum Bay, 3, 37

Picture: 3, 3

Needlework, Plain. See *Plain Needlework.*

Nefertiti (14th century B.C.) Egyptian queen, wife of Akhenaton (Ikhnaton) who was father-in-law of Tutankhamen (*q.v.*). Her features are well-known from a portrait head which has been preserved. (*p.h.*)

Negative is the name given to a photographic plate or film after it has been exposed and developed, 5, 98

Picture: A Photograph in Negative Form, 5, 96

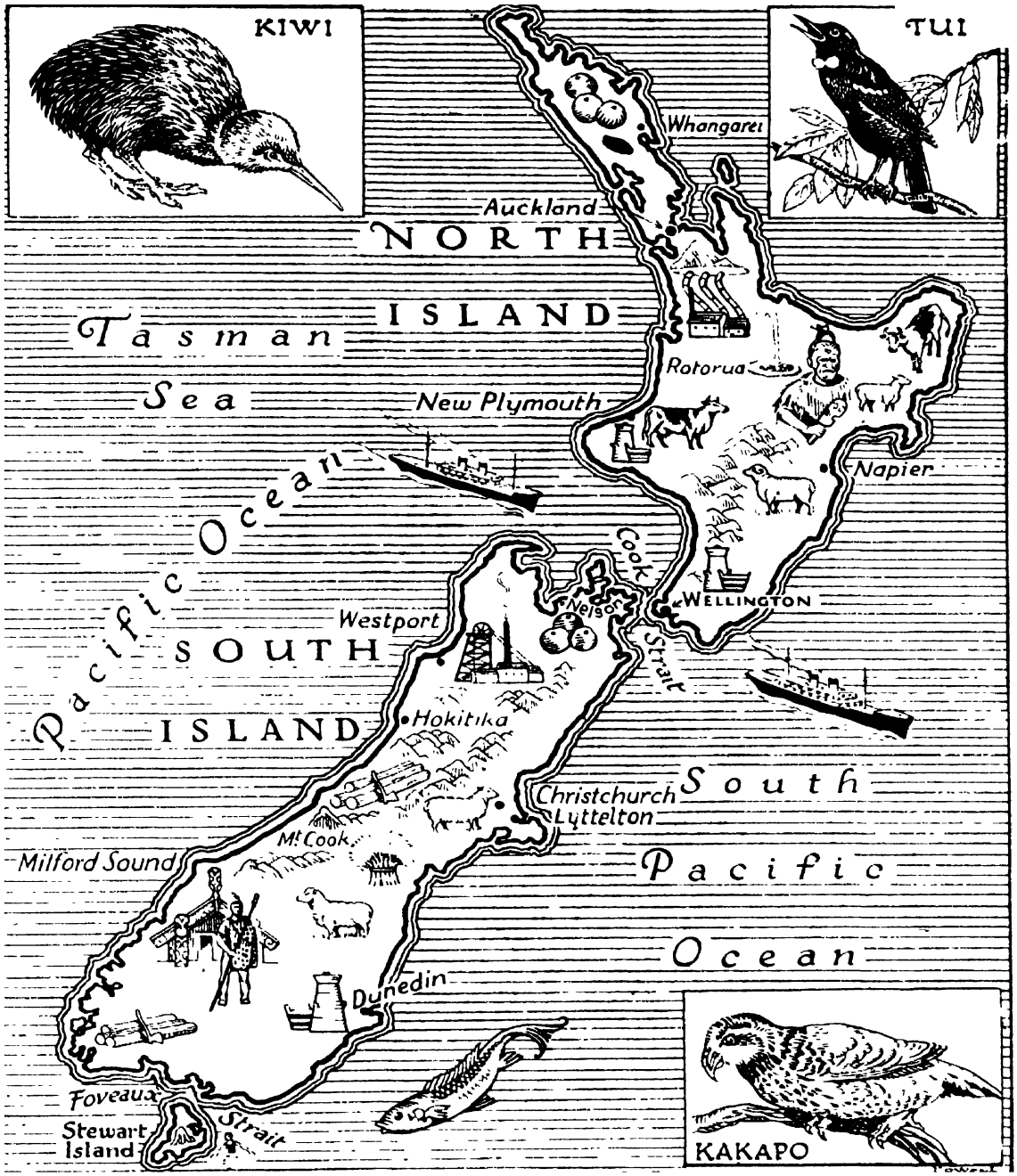
Negri Sembilan is a State of the Federation of Malay. Its chief exports are rubber, tin, coconuts. The capital is Seremban.

Negrito is the word used to describe small people of reputedly negro descent, many of them pygmies. Some negritoes are found in the forests of Malaya, 3, 402

Nehalem Valley. District of Oregon, in the U.S.A. Here was cut a world-famous flag pole 246 ft. long, 1, 330

Nehru, Pandit Jawaharlal (born 1889). Indian statesman, educated at Harrow and Cambridge, and practised as a lawyer. When the Dominion of

IN NEW ZEALAND'S ISLANDS



Specially drawn for this work

Probably no land in which British pioneers have settled was more naturally blessed than New Zealand. Fertile valleys, a wonderful climate, and, if the rivers are too swift for navigation, they now supply the country with electricity. In the North Island are the luxurious dairy lands which supply Great Britain with large quantities of cheese and butter. Here, too, are the Rotorua hot springs and geysers. In the South Island are the Canterbury Plains, home of the sheep farmers who supply about half the lamb and mutton imported into Britain. In recent years *New Zealand* (see p. 264) has ceased to be purely agricultural and industries have developed rapidly.

India was established in 1947 he became the Prime Minister, 3, 312
Picture: 3, 357

Neilson, James Beaumont, a Scottish gas engineer. In 1828 he invented the method of forcing heated air instead of cold air into a blast-furnace, 6, 47

Neilston is a busy industrial town of Renfrewshire, Scotland

Nejd is a country of Central Arabia consisting chiefly of desert and is inhabited by Bedouins. It forms part of Saudi Arabia (*q v.*).

Nelson. A busy textile town of Lancashire. The name is also given to (*a*) a river of Canada; (*b*) a town in British Columbia, and (*c*) a district of New Zealand (in South Island) as well as to the capital of this district.

Nelson, Horatio (1758-1805). The great English admiral was born in Norfolk and went to sea at the age of twelve His first big victory was the Battle of St Vincent, and he fought the Battles of the Nile, Copenhagen, and Trafalgar, 2, 196, 410, 8, 8. (*p.h.*)
Pictures: Nelson on Board the *San Josef*, 2, 196
The Battle of Trafalgar, 2, 197
Nelson Joins the *Victory*, 2, 199
The Death of Nelson, 2, 200
Meeting of Wellington and Nelson, 2, 204

Nelson's Column. Set in the middle of Trafalgar Square, London, the column (overall height 170 ft 2 in.) is surmounted by a figure of Nelson, three times life-size, in admiral's uniform.
—the lions at the base were the work of Landseer, 7, 98
Picture : Nelson's Column, 3, 18

nem. con. means *nemine contradicente*, *i.e* , no one contradicting.

Nemesis, in the myths of the Greeks, was the daughter of Night, who directed the righteous anger of the gods against the insolent favourites of Fortune.

Nene, or Nen, is the name of a river which flows through Northamptonshire to the Wash. It flows past Wellingborough, Thrapston, Oundle, Peterborough and Wisbech, 3, 68

Neolithic. Belonging to the later part of the Stone Age. Many Neolithic axe-heads, arrow-heads, chisels, knives and scrapers, made of flint and other hard stones have been discovered.
They are much more highly finished than those dating back to the Palæolithic, or Early Stone Age and show a great advance in skill and design.

Neon. An element in gas form (symbol Ne) present in the atmosphere. Sir William Ramsay discovered it in 1898, and showed that there was one volume of it in every 100,000 volumes or so of air.
If enclosed in a vacuum tube it glows with a brilliant red orange light when an electric current is passed through it. The light has a fog-penetrating quality which makes it very useful for the beacons of aerodromes, 6, 159

Nepal is an independent Kingdom situated in the north-east of India. It contains parts of the Himalaya Mountains and is the home of many Gurkhas. Katmandu is the capital. Cattle, hides, and skins, and agriculture provide the main industry, and there are important forests in the south, 3, 352

Nepenthes. Tropical plants having a cup or vase filled with clear water which snares insects. They are known as fly-catching or pitcher plants, 1, 291
Pictures: 1, 342

Nepeta is a low-growing plant, the variety Mussini with violet-coloured flowers being much used as an edging. Known popularly as catmint.

Neptune is the name of one of the nine planets. Known as the "Outermost Planet," it is 2,794,000,000 miles distant from the sun and has a diameter of 31,000 miles. It requires over 164 years to complete one revolution of its orbit, 8, 159

Neptune, the Roman god of the sea, was identified with the Greek Poseidon. (*p.h.*)

Nerbudda. Name of a river in India on the banks of which grows an enormous banyan tree, 1, 280

Nereids, in the classical myths, were the nymphs of salt water as the Naiads were of fresh water.
Nereids were the constant attendants of Neptune.

Nero. Tiberius Claudius (A D. 37-68) was proclaimed Emperor of Rome when only seventeen years old. He murdered the heir to the throne, and subsequently his mother, Agrippina, and then set fire to Rome and burned many Christians.
A successful revolt against him and his cruelties led to his suicide.
—it was Nero who first conceived the idea of the Corinth Canal, 4, 158

Nerve Cells in our bodies vary in size and shape. Some may be tiny white or grey cells having branching fibres or one long fibre.
Bundles of fibres lying together are called nerves, 8, 227
Picture: 8, 227

Nervous System. The central nervous system may be called the "Government" of the body, which carries out the decisions of the brain. It is described in 8, 227 *et seq.*
Pictures: A Nerve Cell, 8, 227
The Brain, 8, 229
See also *Brain.*

Ness is the name of a river and loch in Inverness-shire, Scotland. The loch forms part of the Caledonian Canal, 3, 128

Nest-Building Fish. See *Sticklebacks.*

Nesting Boxes for Wild Birds. How and where to place them in the best interests of feathered visitors, 1, 205
Picture: 1, 205

Nest, The Thrush's. A Poem by John Clare, 9, 96

Netherlands, Kingdom of. See *Holland.*

Netherlands Antilles, formerly known as Curaçao, comprise the large island of Curaçao and numerous smaller ones in the West Indies. Willemstad on Curaçao is the seat of government of this Dutch colony 4, 394

Netley. A town of Hampshire standing on Southampton Water. It is famous for its military hospital.

Nettle. Name of a well-known herb of which there are several kinds. The great nettle is the common stinging nettle. See *Dead Nettle Indian Nettle, Stinging Nettle.* (*p.h.*)

Nettle, New Zealand. See *Ongaonga.*

Neuchâtel. Name of a canton of Switzerland and of its capital. Within the district is the famous Val de Travers asphalte deposit and there is also the large Lake of Neuchâtel.

Neural. Pertaining to the nerves. The neural system is the whole network of nerves in the body Some neural complaints, such as neuralgia and neuritis are very painful.

Neuralia is the name of a beautiful hill station in Ceylon which is also known as Nuwara Eliya, 3, 367

Neuschwanstein is the name of a castle in the Bavarian Alps built by King Ludwig II of Bavaria. It was begun in 1884 and was planned to resemble a medieval knight's stronghold, 4, 84
Photo-tone Supplement: Built by Moor and Monarch, 4, *between* 112 and 113

Neutral. Not siding with either of two parties; indifferent An umpire of games must be strictly neutral.
Even during a world war some countries remain neutral, and an inhabitant of such countries is a neutral.
To neutralise is to counterbalance or counteract

Neuve Chapelle is a village of northern France. It gave its name to a great battle of the 1914 18 war, 2, 237

Neva is the name of a river of the Soviet Union. It flows from Lake Ladoga into the Gulf of Finland, 4, 117

Nevada is one of the western states of the U.S A. It has rich mineral wealth and also agricultural interests. There are large Indian reservations in the state. Carson City is the state capital, 6, 102
Pictorial Map 4, 290

Nevinson, Christopher Richard Wynne (1889-1946) An artist who has painted some remarkable aeroplane pictures, and also landscapes as seen from the air, 7, 117
Photo-tone Supplement Power-house, Battersea, 7, *between* 112 and 113

New Amsterdam was taken by the British from the Dutch in 1664 and renamed New York, 2, 408

Newark, in the county of Notts, stands on the River Trent and has an ancient castle. It is a centre of agricultural interests, 3, 71

Newbolt, Sir Henry John (1862-1938). An English writer of prose, verse and plays, 7, 155
Poem: Drake's Drum, 9, 109

New Brighton. A popular holiday resort and residential centre of Cheshire. It is reached from Liverpool by a ferry across the Mersey.

New Britain. The largest island of the Bismarck Archipelago in the Pacific. It has plantations of rubber, cotton and coffee and is administered by the Government of Australia. The chief town is Rabaul while Kokapo is the government headquarters

New Brunswick is one of the eastern provinces of Canada. Its industries are farming, fishing and timber.
Fredericton is the capital, 3, 161

Newbury is a town of Berkshire, on the River Kennet. Once a centre of the cloth industry.

Newbury-Eton is one of the few successful light aeroplanes produced since the last war. It is a three-seater.
Picture and Description: **5**, 237
New Caledonia is a French island in the South Pacific Ocean. Noumea is the capital. The island has considerable mineral resources for its size, including nickel and chrome. It was discovered by Captain Cook, **2**, 314
Newcastle, County Down, is a holiday resort and fishing centre of Northern Ireland famous for its scenery.
Newcastle is a town of New South Wales, Australia, and a great centre for steel production. It marks a limit of the New South Wales coalfield, **3**, 236 *et seq.*
Pictures: **3**, 240;
Pictorial Map: **3**, 243
Newcastle-under-Lyme, a town of Staffordshire close to the Potteries. It takes its name from the Lyme Brook, on which it stands.
Newcastle-upon-Tyne is the county town of Northumberland. It is interested in coal and shipbuilding and is a vast commercial centre. It has a castle of the twelfth century, **3**, 81
Picture Bridge Under Construction, **5**, 51
Railway Crossing, **6**, 69
Photo-tone Supplement: Bridges Big and Little, **5** *between* 64 and 65
Newcomen, Thomas (1663–1729). He invented the earliest practical type of steam engine, which was used for pumping water from mines One of Newcomen's engines gave continuous useful service for 150 years, **5**, 117
Picture: Model of Engine, **5**, 116
New Delhi was the former seat of the Government of India before the two new Dominions were created in 1947, and it remains the capital of the new Dominion of India, **3**, 332
Picture: **3**, 329
New England. Name given by the first English settlers to their home in America. New Hampshire, Maine, Vermont, Massachusetts, Rhode Island and Connecticut comprise New England, **2**, 158
Pictorial Map: **4**, 290–291
New English Art Club, dating from 1885, has brought out many notable figures in the world of English painting, **7**, 111
New Forest. A district of Hampshire thickly covered with trees, much of the land belonging to the Crown.
—the wild ponies, **1**, 97; **3**, 38
Newfoundland is a large island off the coast of North America. Oldest colony of our Commonwealth, it has now become the tenth province of the Dominion of Canada (with Labrador). St. John's is the chief town. Newfoundland is famous for its cod fisheries, its timber and pulp mills, and the part its airports of Botwood and Gander play in the trans-Atlantic route from Britain to Montreal, **3**, 161, 169
—retained by Britain under the Treaty of Utrecht (1713), **2**, 178
—sighted by Cabot (1497), **2**, 278
—becomes part of the Dominion, **2**, 416
Newfoundland Banks are famous fishing grounds off Newfoundland, North America, where large catches of cod are made, **3**, 161, 169
Newgate Calendar is a record of English highwaymen, thieves, and robbers.
New Guinea. A large island north of the continent of Australia. About half of it is administered by Australia, the remainder being Dutch. The chief town of Papua, which is the south-eastern part of the island, is Port Moresby. There are important goldfields on the island, **3**, 244, 388
—its dense forests, **1**, 321
—Captain James Cook's voyages, **2**, 312
New Hampshire is one of the New England States of the U.S.A It has Canada on its northern side. Produces timber, agricultural crops including apples and has many manufactures.
Its capital is Concord, **2**, 158
Pictorial Map: **4**, 291
New Haven, a large city and seaport of Connecticut, U S.A. It is a commercial and trading centre and the seat of Yale University, which has a great record, especially in scientific work.
Picture: **4**, 281
Newhaven, Sussex. An important channel ferry port, steamers ply from here to and from Dieppe, **3**, 36
New Hebrides Islands. They are in the Pacific and form a condominium, that is to say, they are administered jointly by Britain and France. There are three active volcanoes in the group and the main product is copra, **3**, 390, **4**, 18
New Holland was the name given to the island continent of Australia by the Dutch navigator Tasman, **3**, 202
New Ireland is one of the islands of the Bismarck Archipelago in the Pacific.
New Jersey, one of the Atlantic States of the U S.A., coming just to the south of New York. It has farming interests and important smelting and chemical industries. Trenton is the capital.
Pictorial Map: **4**, 291
Newlyn is a popular Cornish resort on Mounts Bay. It has a fishing fleet, **3**, 46
Newmarket, a market town of Suffolk, famous for its Heath and horse-racing, **3**, 62
New Mexico is one of the states in the west of the U.S.A. It has farming interests and considerable mineral resources, including gold, silver, copper, and coal. Santa Fé is the state capital. Pueblo Indians are among those living in this state.
—ancient irrigation systems, **5**, 83
Pictorial Map: **4**, 290
New Norfolk is a town of the state of Tasmania in Australia. It stands on the Derwent River of this island state.
Photo-tone Supplement: Tasmania—Australia's Island State, **3**, *between* 240 and 241
Newnes, Sir George (1851–1910). Born at Matlock. A pioneer in publishing journals which appealed to a wide public. He launched *Tit-Bits* in 1881 and its success was immediate. Followed it with *The Strand Magazine* and many other publications, **9**, 209
—in 1898 he organised and greatly helped financially the "Southern Cross" Antarctic Expedition, **2**, 368
New Orleans, in Louisiana, is the second largest port of the U.S.A. and a great market for cotton. It stands at the mouth of the Mississippi, **4**, 292
New Palace of Westminster. This is the official name of the Houses of Parliament at Westminster, London.
New Place, at Stratford-on-Avon became the residence of Shakespeare in 1597, and here he died in 1616.
New Plymouth (population 22,600) is a port of the North Island of New Zealand.
Picture: **3**, 274
Newport. A town of Shropshire and a centre for agricultural machinery.
Newport, standing on the River Medina, is chief town and business centre of the Isle of Wight, **3**, 38
Newport, Monmouthshire, is one of the great ports of the Bristol Channel and a big centre for the export of South Wales coal. It is also a manufacturing town, **3**, 72 and 94
Newport News. Well-known seaport of Virginia, U S.A. It stands at the mouth of the James River and dates from 1620. A large city, it is a great exporting centre.
New Providence. The principal island of the Bahamas group in the British West Indies Nassau, the capital of the Bahamas, is on this island, **3**, 398
Newquay, facing the open Atlantic, is a famous resort of North Cornwall, **3**, 49
Picture: **8**, 106
New River is an artificial water-course constructed early in the seventeenth century by Sir Hugh Myddelton to bring water from springs in Hertfordshire to Clerkenwell, in London. It was forty miles long originally, but has since been shortened by thirteen miles, **6**, 240, **9**, 411
Newry is a town and seaport of County Down, Northern Ireland, standing on the River Newry. It is interested in flax and linen but has many other industries.
New Salem is a town in Illinois, U.S A., where log cabins of the kind used by Abraham Lincoln are carefully preserved as examples of the crude homes of the early settlers.
Picture: **4**, 265
New Siberia Islands are in the Arctic Ocean off the north-east coast of the U.S S.R., between East Cape and Cape Chelyuskin, **2**, 356
News-letters written by hand and copied for circulation were the earliest attempts to supply news. By the time of Queen Elizabeth they had become well established, **9**, 206
Newspaper. A periodical publication which reports public events and current happenings besides comments and criticisms on matters of public interest. One of the earliest newspapers was the Roman *Acta Diurna*, believed to have been first issued by Julius Cæsar. In Britain written newsletters were circulated before the advent of the printing press. The first newspaper to be printed was the German *Avisa Relation oder Zeitung* in 1609, while the first English newspaper *The Weekly Newes* appeared in 1622. In 1665 the *Oxford Gazette*

appeared but became the *London Gazette* (*q.v.*) the following year.
Britain's first daily newspaper was the *Daily Courant* in 1702. Apart from the *London Gazette*, which is the government official journal, *The Times* (*q.v.*) is our oldest newspaper. London's national daily newspapers have the largest circulations of any in the world. In many other countries, as in the U.S.A., distances make it impossible to have newspapers circulating throughout the whole country. See *Making a Daily Newspaper*, **9**, 205 *et seq.*
Pictures: How We Get the News, **9**, 207
News from Abroad, **9**, 208
Centre of a Far-flung News Network, **9**, 209
As the News Flows In, **9**, 211
The Street of Ink, **9**, 212
The Linotype, **9**, 213 and 214
Making the Stereo, **9**, 215
Ready for the Run, **9**, 216
From Printing Press to Public, **9**, 217
Printed and Folded, **9**, 218

New South Wales is the senior State in the Commonwealth of Australia. It became a British settlement in 1770: and in 1788, the first settlement was established at Port Jackson. The State now produces vast quantities of wool, and also yields important grain and fruit crops. There is mineral wealth, especially coal, and there are large iron and steel works. The state capital is Sydney, which is also the largest city in the Commonwealth, **3**, 210
—its discovery by Captain Cook, **2**, 312, 410
—the first settlement, **3**, 202 *et seq.*
Pictures: The Coastal Grandeur of New South Wales, **3**, 200
Mutton for Britain, **3**, 207
Dairy Products, **3**, 208
Harnessing the Murray River, **3**, 211
A Banana Plantation, **3**, 212
Transporting Rams by Air, **3**, 214
Taking Wool to be Sold, **3**, 218
Cattle Crossing a New South Wales River, **3**, 222
Entering a Meat Pen, **3**, 225
Australia's Largest City, **3**, 231
Where Overseas Liners Berth, **3**, 232
Sydney's Sands and Surf, **3**, 233
Newcastle, Australia's City of Steel, **3**, 240
In the Blue Mountains, **3**, 241
Logging in New South Wales, **4**, 393
Colour Plate: Sydney Harbour Bridge from the City, **3**, *facing* 204
Photo-tone Supplement: Australia, **3**, *between* 240 and 241
Pictorial Map: **3**, 243

New South Wales Coal Basin is the richest coalfield in the Commonwealth of Australia, **3**, 236

New South Wales Emblem. See *Waratah.*

New Spain was the name given by the Spaniards to their colonies in Central America, **4**, 297

Newsprint is the name of the material made from wood-pulp upon which newspapers and periodicals are printed. See *How Paper is Made*, **6**, 329 *et seq.*
Canada is one of the leading nations in its production, **3**, 167

Newt. Small, tailed amphibian creature though usually spending a great part of their time on land. Three kinds are found in Britain, the common or spotted, the great or crested, and the webbed newt, **1**, 158, 160 *et seq.* (*p.h.*)
Picture: Great Newt, **1**, 159

New Testament. See *Bible.*

Newton, Sir Isaac (1642–1727). Son of a small farmer in Lincolnshire, he earned undying fame by his scientific discoveries, particularly of the law of gravitation, **2**, 179; **7**, 352
Pictures: What a Falling Apple Did, **7**, 353
Newton's Reflecting Telescope, **7**, 354

Newton-le-Willows is an engineering centre of Lancashire where railway engines are made.
Picture. **4**, 348

Newton Stewart. A town of Wigtownshire, Scotland, standing on the River Cree. It is the business centre of an agricultural district.

Newtown, Montgomeryshire, stands on the River Severn and is an old centre of the Welsh woollen industry, **3**, 102

New Waterway, The, is the name given by the Dutch to the mouth of the River Lek from Rotterdam to the sea, **4**, 69

New Westminster is a port of British Columbia from which timber is shipped, **3**, 169

New York. (1) A State of the U.S.A. (2) A city of that State, one of the largest cities in the world, with a population now estimated at some 12½ millions (7,500,000 according to the 1940 census), **4**, 268 *et seq.*
—an early colonial centre, **2**, 191, 408
—New York's Water Supply, **6**, 251
Pictures: Outward Bound from New York, **4**, 261
New York by Night, **4**, 270
An English "Queen" at New York, **4**, 271
Times Square, New York, **4**, 272
The Statue of Liberty, **4**, 273
Looking up at the Rockefeller Centre, **4**, 275
Looking down on New York, **4**, 276
Up Among the Clouds, **4**, 277
Pictorial Map: **4**, 293
Photo-tone Supplements: From New York to Hollywood, **4**, *between* 272 and 273
Modern Architecture (Empire State Building), **7**, *between* 288 and 289
Colour Plate: The Ocean Voyager's First Glimpse of the New World Today, **4**, *facing* 292

New Zealand Company was formed in Britain during the nineteenth century by Edward Wakefield (*q.v.*) for the purpose of colonising New Zealand. The first colonists sent by the Company reached New Zealand in 1840, **3**, 252

New Zealand, Dominion of. New Zealand is in the South Pacific and was discovered by Tasman and many years later circumnavigated by Captain Cook. The Dominion consists of two main islands and is famous for its sheep, cattle, dairy and general farm produce and fruit. The original inhabitants were the Maoris. Auckland is the largest town and Wellington is the capital. The population numbers nearly 2,000,000, **3**, 249 *et seq.*; **4**, 395
—New Zealand becomes a Dominion, **2**, 220
—circumnavigated by Captain Cook, **2**, 311, 312
Pictorial Map: **10**, 261

New Zealand Farms specialise in dairy produce and sheep-rearing.
Pictures: A New Zealand Farmstead, **3**, 262
On a Farm in New Zealand, **3**, 263
Butter Churning in a New Zealand Dairy Factory, **3**, 264
Sights and Scenes in New Zealand, **3**, 267; **3**, 269
Inside a New Zealand Cheese Factory, **3**, 272

New Zealand Nettle. See *Ongaonga*

Ney, Michel (1769–1815), came of humble parents and rose to be one of Napoleon's most famous marshals and was known as "the bravest of the brave." He rejoined Napoleon on his return from Elba and was arrested after the battle of Waterloo by Louis XVIII, tried, and shot, **2**, 410

Ngami, Bechuanaland. The first of five lakes discovered by Livingstone, **2** 333

Ngauruhoe is the greatest of the three volcanoes of New Zealand, and is 7,515 ft. high. It stands to the south of the Rotorua district of North Island, **3**, 258
Picture: **3**, 257
Photo-tone Supplement: New Zealand Scenes, **3**, *between* 256 and 257

Niagara Falls occur where the Niagara River plunges over a limestone edge. They are divided by Goat Island into the Canadian, or Horseshoe, Fall, and the American Fall, **2**, 245, **3**, 192 *et seq.*
—Electric Power from Water, **5**, 63 *et seq.*
Pictures: **3**, 187; **5**, 63
See also "Waterfalls," *Atlas Supplement*, end of this Volume.
An American town on the River Niagara is called *Niagara Falls*, as is a Canadian port on the same river.

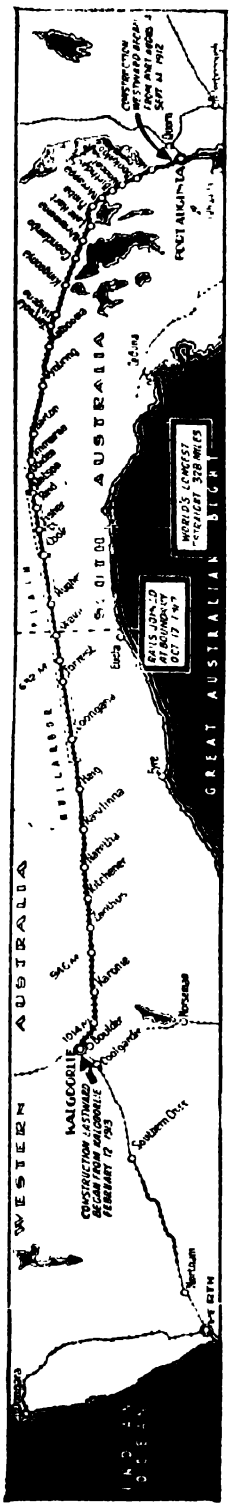
Nibelungs appear in the legends of Germany and were associated with Siegfried. The story is told in a poem written in the eleventh century by an Austrian, **4**, 71

Nicaea. An ancient city in Asia Minor, founded in 316 B.C. In A.D. 325 the Emperor Constantine summoned a famous Council of Christian Churches, which met here and issued the first version of the Nicene Creed.

Nicaragua is a Central American republic with a population of over 1 million. It has the largest area and the smallest population of the Central American States. Agriculture is the chief occupation, coffee, bananas, and cotton being the main crops. There are gold mines and timber. Managua is the capital, **4**, 304
Pictures: The Church at Corinto, **4**, 304
Where Spain once Ruled, **4**, 305
The Barren Summit of Momotombo, **4**, 306

Nicaragua is the largest lake in the Central American republic of the same name, **4**, 304

THE LONGEST STRAIGHT LINE OF RAILWAY





Camera Press

From Port Augusta on the Spencer Gulf the Trans-Australian Railway runs across the island continent to Perth on the Indian Ocean. It traverses the vast unstocked 800-mile stretch of the *Nullarbor Plain* (see p. 260) and at one stage the line runs for at least 300 miles in a straight line. This photograph shows the scene from the guard's van. At the side is a map showing the route the railway follows.

Nicarao. An Indian chief who lived in Nicaragua which is said to take its name from him, **4**, 304

Niccola of Pisa (born about 1206). He founded a completely new school of sculpture, **7**, 301

Nice is a town of the French Riviera and a great resort during the winter months, **4**, 13, 148
Picture: **4**, 138

Nicholas II (1868–1918). The last of the Czars of Russia. He was forced to abdicate in 1917 and sent as a prisoner to Siberia with his wife, son and four daughters. All were assassinated in 1918, **4**, 106

Nickel. A white metal, one of the elements (symbol Ni), possessing great hardness, but easily hammered into shape. It is used in the coins of many countries, and in the manufacture of specially tough steel.
Its name comes from the German *Nickel* which means a troublesome goblin, and was given to it because it caused smelters a great deal of trouble when it formed part of copper ore, **6**, 107 *et seq.*
Pictures: A Converter Discharging Copper, **6**, 107
At the Pit-Head, **6**, 108
The Last Stage in Refining Nickel, **6**, 109
Nickel-Plating, **6**, 110
Adding Nickel to Iron, **6**, 111

Nickel Steel, used for motor car engine valves, is stronger than ordinary steel, **6**, 66, 107

Nicobar Islands. See *Andaman and Nicobar Islands.*

Nicosia. The capital of the British island of Cyprus in the eastern Mediterranean. It has a population of over 35,000, **3**, 388

Nicotiana. Name of the tobacco plant grown for decoration in gardens. A half-hardy annual, it is different in size and type from the tobacco plant of commerce.

Niemen. A river rising in White Russia which flows, by way of Kaunas in Lithuania, into the Baltic, **2**, 205

Nietzsche, Friedrich (1844 1900). German philosopher who wrote of supermen, praised war and conquest, attacked pity and mercy, and can be held partly responsible for the perversion of German ideas on justice and humanity.

Nieuport is a town and seaport of Belgium, standing on the River Yser.

Nigella. Hardy annual plant with blue or white flowers; often known as "Love-in-a-Mist," **8**, 278

Niger. A great river of West Africa, it is more than 2,500 miles in length, **2**, 272; **3**, 379
—Mungo Park sent to obtain information about the Niger, **2**, 322

Nigeria. A British colony and protectorate in West Africa. Of the population of 21,800,000, only a few thousands are European. Lagos is the capital and chief port. The main products include rubber, gum arabic, mahogany, cocoa, and groundnuts. Coal is mined, **3**, 379 *et seq.*; **4**, 384
Pictures: Drums that Talk, **3**, 380
A Village in Northern Nigeria, **3**, 381
In the Walled City of Kano, **3**, 382
Picking Groundnuts in Nigeria, **4**,371
West African Trading Scenes, **4**, 379

Nightingale. A British bird like a large, handsome robin, but without the red breast. Sings in the night, **1**, 193. (*p.h.*)
Picture: **1**, 192
Special Colour Supplement: British Wild Birds, **1**, *between* 160 and 161 (Plate 3)

Nightingale, Florence (1820–1910). Became interested in nursing when young and trained at Kaiserwerth and Paris. Later went out to the Crimea and as the "Lady of the Lamp" entirely reformed the system of hospital nursing, **2**, 217; **7**, 381. (*p.h.*)
Picture: Florence Nightingale Visits Woolwich, **2**, 217

Nightjar. A British bird which hunts during the night, resting throughout the day. Plumage brown with black markings. It is a summer visitor, **1**, 186

Night-Scented Stock. See *Mathiola.*

Nightshades are found in three varieties. Common Nightshade is of dwarf habit; Deadly Nightshade more bushy; and Enchanter's Nightshade 18 in. high and erect.
Each variety bears black berries, all of which are poisonous, **1**, 306, 344; **8**, 244
Picture: **1**, 345

Nijni-Novgorod is a large district of the Soviet Union. The great River Volga flows through the district and there is much forest land.
The capital is an ancient and historic city of the same name famous for its annual fair which attracts business people from many parts.

Nikko is a religious centre on the Island of Honshu in Japan, **4**, 256
Pictures: Summer in Japan, **4**, 247
At the Shrine of Iyeyasu, **4**, 259

Nile. A great river of Africa some 4,000 miles in length and the second longest river in the world. It flows through Egypt to the Mediterranean, its waters being the lifeblood of the rainless Egyptian fields. There are many dams along its course and more are planned to control the river when it breaks into flood each year, **4**, 191; **5**, 78
Pictures: The Lower Nile, **4**, 192
In the Great Temple of Luxor, **4**, 193

Nile, Battle of. Fought 1798, it resulted in one of Nelson's great naval victories. Here he lost the sight of one eye, **2**, 197, 410; **8**, 10
Picture: **8**, 11

Nilgiri Hills are in the southern tip of peninsular India, inland from Calicut. Tea and cinchona plantations flourish here, **3**, 321

Nilometer is an instrument for measuring the extent of the floods in the River Nile, **4**, 197

Nimbus is the term used to describe a mixture of cirrus, cumulus and stratus clouds, **5**, 9

Nimes is a town of France, an important trade centre. Also noted for its Roman remains, **4**, 1; **4**, 148

Nimrod was a ship commanded by Sir Ernest Shackleton in the Antarctic, **2**, 371, 374

Nina was the name of one of the three ships used by Christopher Columbus in the discovery of America, **2**, 276

Nineveh was a city of Assyria on the banks of the River Tigris. Its astronomers made a report to their King on the planet Mercury, **4**, 199; **5**, 73; **8**, 140
—it became the chief city along the Tigris and contained some 22,000 clay tablets, probably the earliest library known in Asia, **9**, 14

Niobe, in the myths of the Greeks, was so proud of her numerous children that she provoked Apollo and Artemis into killing them all, and she herself was turned into a stone which shed tears in summer.

Nippon is the Japanese name for Japan. It means "the place where the sun rises," **4**, 247

Nish is a town of Yugoslavia, in Central Serbia. It stands on the River Nisava. Here Constantine the Great was born.

Nismes is a town in the South of France, where there is a great aqueduct spanning a valley with three tiers of arches. It was built by the Romans, **6**, 238

Nith. A river of Scotland. It rises in Ayrshire and flows into Solway Firth, **3**, 112

Nitrate. A salt of nitric acid. The chemical symbol for nitric acid is HNO_3, signifying that every molecule of the acid contains one atom each of hydrogen and nitrogen and three atoms of oxygen

Nitrates, which are obtained from the deserts and drier parts of South America (especially Chile) are used in all parts of the world as fertilisers. The industry has important by-products such as iodine, **4**, 37, 323
Picture: **4**, 326

Nitrogen is an element (symbol N), one of the chief gases in the air. Almost four-fifths of the atmosphere we breathe consists of nitrogen. It has neither taste nor smell, and will not burn

Nitro-Glycerine. A very powerful explosive made by treating glycerine with nitric acid and sulphuric acid. Mixed with the earth called kieselguhr, it forms dynamite; while with the cellulose of cotton it makes blasting gelatine.

No. means *numero, i.e.*, number.

Nobel, Alfred Bernhard (1835-96). A Swede, he discovered the explosive which he named dynamite.
With his great fortune he founded prizes to be awarded among discoverers, writers and others, **9**, 406

Nobile, General Umberto. An Italian explorer, he flew to the North Pole at different dates in the airships *Norge* and *Italia*, **2**, 365

Noble. Name of a gold coin valued at 6s. 8d. It has long been obsolete.
Picture: **8**, 303

Nobody, Mr. A Poem by Anon., **9**, 112

Noctule. A British bat with a wing-span of about 15 in. and soft, yellowish fur.
Picture: **1**, 140

Nocturne, in an art sense, means a picture of a night scene, or in music a dreamy placid composition.

Noddy is the name of a bird of the

tern family found in the tropics. It makes a nest of seaweed.
Nomadic. Roaming; wandering from place to place. The word is used chiefly of tribes or races which have no fixed abode, but range about to find fresh pastures for their livestock.
Nome is a town of Alaska, on Bering Strait, where low quality gold ore is found, 3, 197
Nonconformity is the term applied in this country to any religious movement outside the Established Church. It came into being with the enforcement of the Act of Uniformity in 1662 and began a long struggle for religious liberty. Universities were opened to Nonconformists in 1871.
Noodles. A preparation of flour used in soups by the Chinese, 4, 240
Nord is the name of a department of north-eastern France. It has coal mines and many industries and is noted for its agricultural produce. The capital is Lille.
Nordenskiold, Nils Otto, Baron. A famous Swedish explorer, he was the first to discover the North-East Passage, 2, 308
Nordhausen. A town of the Harz Mountains of Germany where textiles are made. During the war V.2 rockets were assembled here in an underground factory, 4, 85
Nordic. A racial type, characterised by tall stature, long head, and fair skin, hair and eyes. Found in its purest form among Swedes and Finns.
Nordkette is the name of a peak in Austria not far from the town of Innsbruck
Picture: 4, 89
Nore, The. A sandbank at the mouth of the Thames about half-way between the Essex coast and the Isle of Sheppey A lightship, which was the first of its kind, was placed there in 1731, and its position is now marked by the Great Nore Light, 3, 25
—the mutiny at the Nore, 8, 10
Norfolk is a county of East Anglia with a lengthy coastline along which are such well-known places as King's Lynn, Hunstanton, Sheringham, Cromer, Mundesley and Great Yarmouth. The chief rivers are The Yare, Bure, Great and Little Ouse, Wensum and Waveney, some of which feed the famous Norfolk Broads. The industries include fishing, the growing of sugar beet and mustard and other agricultural activities. Norwich, the county town, is a centre of the boot and shoe industry, 3, 59 *et seq.*
Pictures: Cider Making, 3, 55
Billingford Mill near Diss, 3, 60
Making Sugar from Beet, 3, 63
Sailing on the Norfolk Broads, 3, 65
Norfolk, Earl of. A title created after the Norman Conquest of 1066. In the reign of Henry III the Duke of Norfolk defied the King, 2, 108
Picture: 2, 109
Norfolk, Virginia, is one of the chief tobacco ports of the U.S.A., 4, 293
Norfolk Broads is the name given to sheets of water in Norfolk and Suffolk comprising some 5,000 acres and affording navigable waterways for at least 200 miles. Much used as a holiday resort, heavy goods are also transported on the Broads, 3, 59
Picture: Sailing on the Norfolk Broads, 3, 65
Norfolk Island is in the South Pacific. It was discovered by Captain Cook, 2, 314
Norge was the name of an Italian airship, piloted by General Umberto Nobile and commanded by Raold Amundsen, which flew over the North Pole, 2, 361; 5, 186
Norman Architecture is a round-arched variety of Romanesque. It is generally plain with massive pillars, and gives an appearance of great strength. Chief examples in England are parts of Durham, Peterborough, Norwich, Gloucester and Hereford Cathedrals and Tewkesbury Abbey, 7, 297
Pictures: The Norman Arch, 7, 298
Norman Pillar, 7, 300
Norwich Cathedral Choir, 7, 302
Peterborough Cathedral Choir, 7, 307
Norman Conquest. See *Conquest of England.*
Normandy is a province of north-west France and takes its name from the old Norsemen, or Northmen, who long ago made themselves a dukedom there. It was from Normandy that William the Conqueror invaded England in 1066, and it was Normandy that was the scene of great Allied landings on the 6th June, 1944 2, 93, 254
—the Northmen, 4, 6
—the pastures of Normandy, 4, 13
Pictures: The Allied Landings, 2, 255
The Coast at Fécamp, 4, 1
St. Malo, 4, 14
Norman Kings of England. William I, William II Henry I and Stephen. The period lasted from 1066 to 1154.
Normans, or Northmen, came originally from Scandinavia and made themselves a dukedom in northern France around the mouth of the River Seine. The Dukes of Normandy subsequently became Kings of England as a result of the Norman Invasion.
—The Last Conquest of England 2, 93
—The Normans settle at the mouth of the Seine, 4, 6
Norman Wells is an oil-producing centre on the Lower Mackenzie River in the Northwest Territories of Canada 3, 166
Norris City, Illinois, is an important oil distribution centre of the U.S.A. Oil comes to it by a 530-mile-long pipeline from Longville in Texas, 4, 274
Norsemen belonged to the Scandinavian race. They were great sailors and are believed to have discovered America in 1100, 2, 273; 4, 33
North, Christopher. See *Wilson John.*
North, Lord Frederick, 2nd Earl of Guilford (1732–92). He was Prime Minister of Britain from 1770 until 1782 and was the complete servant of King George III who ruled through him in the House of Commons, 2, 193, 194
Northallerton. A market town of North Yorkshire. Nearby was fought the Battle of the Standard (1138), 2, 97
North America covers approximately 8,500,000 sq. miles and extends from the Arctic Circle almost to the Equator. It is joined by a narrow isthmus, through which runs the Panama Canal, to South America, and comprises Canada, United States, Mexico, and Central America (*q.v.*).
Northampton is the county town of Northamptonshire and is a centre for the making of boots and shoes. It has iron foundries, 3, 71
Northampton Heights is the term applied to the high ground on the west of the Fens. In this district are rich iron deposits, 3, 69
Northamptonshire. A midland county of England. It has wide agricultural interests and contains a part of the Fenlands. It is a centre of the iron industry and makes boots and shoes. Peterborough, Wellingborough and Kettering are important towns, 3, 71 *et seq.*
North Berwick is a town of Haddingtonshire, Scotland, a popular seaside holiday resort which is also famous for its golf links.
In the neighbourhood is the historic Tantallon Castle.
North Borneo. Until recently, British North Borneo was a protectorate, but it has now become part of the territory of British Borneo It consists of the mountainous north of the Island of Borneo. Mount Kinabalu (13,455 ft) is the highest peak. The chief towns are Sandakan and Jesselton Rubber, timber, and coconuts are among the products, and there are valuable mineral deposits which have still to be developed, 3, 404
North Briton. The name of a journal founded in 1762 by John Wilkes, (*q.v.*)
North Cape is the northernmost promontory of Norway. It is a good place from which to see the Midnight Sun, 4, 44
North Carolina is one of the States of the U.S.A. It produces cotton, tobacco and similar crops. Its production of timber and mica is important.
Capital, Raleigh.
Pictorial Map 4, 291
North Channel is the name given to the strip of water between the north-east tip of Northern Ireland and the Mull of Kintyre in Scotland.
North Circular Road. One of the modern arterial highways that skirts round the north side of London.
Northcliffe, Lord (1865–1922). One of the pioneers in the publication of popular journals. In 1896 he founded the *Daily Mail,* and later the *Daily Mirror* and *Sunday Pictorial,* in conjunction with his brother, Harold, Lord Rothermere.
Northcote, James (1746–1831). A British painter and author
Picture: The Killing of Wat Tyler, 2, 127
North Dakota is a State of the U.S.A. It is mainly interested in agriculture. The capital is Bismarck.
Pictorial Map: 4, 290

North Downs. Name given to a range of chalk hills which extend to Dover at the seaward end, **3**, 18
Picture: **3**, 414

North-East Passage is the route between western Europe and eastern Asia by way of the Arctic. Sir Hugh Willoughby attempted to find the route in 1553, **2**, 304

Northern Ireland is a political division of Ireland. It comprises the counties of Antrim, Armagh, Down, Fermanagh, Londonderry and Tyrone. It has its own Parliament and also retains the right to send members to the House of Commons at Westminster. The capital is Belfast, **2**, 241; **3**, 144 *et seq*

Northern Lights is another name for *Aurora Borealis* (*q v*)

Northern Rhodesia. See *Rhodesia, Northern*

Northern Territory is that part of the Commonwealth of Australia bounded by South Australia in the south, by Queensland in the east, and by Western Australia in the west. Its chief town is Darwin, important for its harbour and as an airport. There is little agriculture, but stock is raised and there are important mineral resources, including gold (at Tennant Creek). There are some 12,000 aborigines in the Territory, **3**, 222
Pictures. The Friendly Aborigine, **3**, 202
In the Northern Territory, **3**, 223
Mounted Police, **3**, 224
At the Centre of Australia, **3**, 225
Pictorial Map: **3**, 242 and 243

North German Plain is the name given to that part of Germany north of the central highlands. The plain is a region of heathland and fenland running across the base of Denmark, across the Luneberg Heath towards the Dutch frontier. Its eastern portion is in that part of Germany now within Poland, **4**, 84

North Island contains the two largest cities of New Zealand. It is the centre of the thermal region and has a range of volcanic mountains, 258
Pictures. The Native School at Whakarewarewa, **3**, 251
Steaming Mud Flats of Waiotapu, **3**, 254
A Geyser in Action, **3**, 255
A Mud Volcano in Wairakei Valley, **3**, 256
Nguaruhoe Belching Molten Rock, **3**, 257
A Dinner Cooked in Natural Hot Water, **3**, 258
From the Beach of North Island, **3**, 259
Two New Zealand Cities, **3**, 265
Harnessing the Waters of the Waikato, **3**, 266; **3**, 268
Scenes in New Zealand, **3**, 267
Auckland University, **3**, 270; **3**, 273
With Beauty on the Doorstep, **3**, 274
Colour Plate: Amid the Beauties of New Zealand's Sheep Farms, **3**, *facing* 276
Photo-tone Supplement. New Zealand Scenes, **3**, *between* 256 and 257

Northolt is an airport in Middlesex to the north-west of London. It is not nearly so important as Heathrow, but is nevertheless one of the air gateways to the British capital, **3**, 14

North Pole is one terminus of the earth's axis and its discovery was for many years vainly attempted by Arctic explorers. It was first reached by Robert E. Peary, an American, in April, 1909, **2**, 355 *et seq*, 412. (*p.h*)
Pictures: The "Fram," **2**, 355
At Supper in the "Fram," **2**, 356
Nansen Takes a Walk, **2**, 356
Scott Hansen's Observatory, **2**, 357
Sunday Afternoon on the "Fram," **2**, 357
Commander Peary, **2**, 358
Fridtjof Nansen, **2**, 359
Eskimo Mother and Child, **2**, 360
The Flags at the Pole, **2**, 361
Soviet Scientists at the North Pole, **2**, 362 and 363
The Rescue of Courtauld, **2**, 365
Photo tone Supplement. In the Polar Regions, **2**, *between* 368 and 369

North Riding of Yorkshire is partly agricultural and partly manufacturing, **3**, 82

North Road. See *Great North Road*

North Sea. The sheet of water between Great Britain and the mainland of Western Europe. It is linked with the English Channel by the Straits of Dover
The North Sea is a great centre of the fishing industry and contains the famous Dogger Bank. It is about 700 miles in length and over 400 miles at its broadest part

North Shields, Northumberland, stands on the River Tyne and has shipbuilding and other maritime interests, **3**, 81

North Uist. See *Uist.*

Northumberland is the most northerly of the English counties. Much of the country inland is mountainous and rugged, but towards the coast there are vast industries, such as those of coal, iron and steel, shipbuilding, etc. Tynemouth and Wallsend are in this county. Newcastle-upon-Tyne is the county town, **3**, 80
Picture: A Roman Station as it is today, **3**, 82

Northumberland, Duke of. See *John Dudley*

Northumbria was one of the chief kingdoms of Anglo-Saxon England, **2**, 403

North-West Cape is a promontory of the west coast of Western Australia. Around the cape is said to be one of the world's largest potential oilfields, **3**, 240

North-West Frontier Province. A large and romantic district now forming part of the Dominion of Pakistan. Between the province and the frontier of Afghanistan there are tribal territories. It is mountainous and contains the Hindu Kush and Suleiman ranges. The capital is Peshawar, **3**, 337 *et seq*
Pictures: Looking towards Afghanistan, **3**, 338

North-West India is the name for one of the main geographical regions of the Indian sub-continent. It is dry and comparatively barren, except for such areas as the valley of Peshawar, **3**, 312 *et seq.*

North-West Passage, The Story of the. About Henry Hudson, Sir John Ross, Sir John Franklin and other intrepid navigators and adventurers who tried to find the sea route to China round the North of America, **2**, 294 *et seq.*
Pictures: The North-West Passage, **2**, 219
Colour Plate. The Last Voyage of Henry Hudson, **2**, *facing* 304

North-West Territories of Canada are situated between the Atlantic coast and the Yukon. They are peopled largely by trappers and Eskimo. But recently they have acquired new importance. Gold and silver are now mined at Yellowknife, on Great Slave Lake; petroleum is obtained from Norman Wells on the Lower Mackenzie, pitchblende ore is obtained at the Eldorado Mine, Great Bear Lake, and furs, fisheries, and reindeer herding are expanding.
Pictures: Diamond Drilling for Gold, **3**, 166
Great Bear Lake, **3**, 19

Northwich is one of the salt towns of Cheshire and is an important centre of the British chemical industry. It stands on the River Weaver, **3**, 76

Norton, Major (afterwards Colonel) E. L., was deputy leader and one of the climbers in the assault on Mount Everest, **2**, 389

Norton St. Philip is a village near Bath, Somerset. It contains the famous George Inn
Picture **7**, 318

Norway is a country of Northern Europe forming part of Scandinavia. It is more than 1,000 miles long and its coasts have deep inlets from the sea known as fjords. There are important forests and fisheries. The capital is Oslo. The population numbers over 3 millions, **4**, 33 *et seq*, 356
invaded by Germany, **2**, 248
Pictures. Fashioned after the old Norse Longships, **4**, 33
Norway's "Seven Sisters," **4**, 34
In a Norwegian Fjord, **4**, 34
Where Scott of the Antarctic trained, **4**, 35
Norway's Sea-girt Outposts, **4**, 39
Norway's Countryside, **4**, 40
Norway's Great Fishing Port, **4**, 41
Oslo from Parliament House, **4**, 42
Lapps of Northern Norway, **4**, 51
Colour Plate. The Grandeur of a Norwegian Fiord, **4**, *facing* 52

Norwich is the county town of Norfolk, on the River Wensum. It has a beautiful cathedral and makes boots and shoes, **3**, 62
Pictures: Norwich Cathedral, **7**, 302

Nose Bleeding should be treated in first aid by bathing with cold water the bridge of the nose and applying a cold water pad to the back of the neck, **8**, 236
Picture **8**, 239

Nostra Signora de Cabadonga was a Spanish galleon captured by Anson during his voyage round the world, **2**, 320
Picture. **2**, 321

Notary. Originally an officer of the ecclesiastical courts. In England a Notary Public is usually a solicitor and is a member of the Scriveners' Company. He is often concerned

with the preparation and certification of legal documents for foreign countries.

Notepaper is made of linen and cotton rags. It is usually packed in quires of twenty-four sheets. In every ream there are twenty quires, **6**, 333

Notre Dame de Paris is the great Cathedral of the French capital. It was begun in 1163 and is 390 ft in length, **4**, 11

– title of a romance by Victor Hugo.
Pictures: The Heart of Paris, **4**, 6
Notre Dame de Paris, **4**, 7
Guarded by Gargoyles, **7**, 308

Nottingham is the county town of Notts. and a large manufacturing centre for hosiery, lace and other goods. It stands on the River Trent, **3**, 71 and 73
Picture: The Industrial Revolution, **9**, 327

Nottinghamshire (*abbrev.* Notts.). A county of the English Midlands. An important farming district, it includes Sherwood Forest and many industrial towns, **3**, 71 *et seq*

Nova Pectoris was the name of a star discovered in 1925 which was seen to flare up and split in two.
Picture: **8**, 175

Nova Scotia is a province on the east of Canada. It has minerals and fisheries as well as agricultural and fruit-growing interests. Halifax is the capital, **3**, 169, 181
–Annapolis the site of the first settlement in Canada, **3**, 155
retained by Britain under the Treaty of Utrecht (1713), **2**, 178
Pictures: Apple-picking in Nova Scotia, **3**, 181
To the Memory of French Pioneers, **3**, 183
Malagash Salt Mine, **3**, 190

Nova Zembla. Two islands in the Arctic Ocean belonging to the Soviet Union. They were known to the navigator Henry Hudson. Spelt now *Novaya Zemlya*, **2**, 297

Novelty was the name of one of the early locomotives, designed by John Braithwaite and John Ericsson in 1829
Special Colour Supplement. Railway Engines, **5**, *between* 128 and 129

November 9th is Lord Mayor's Day in London. New mayors and aldermen of boroughs elected.

Novorossiisk is a large Soviet port on the Black Sea and a centre of the cement industry. It lies at the foothills of the Markhot Ridge and is widely known as a health resort.

Noyes, Alfred (born 1880). Widely-read modern English poet. He has also written short stories, a novel and critical studies. From 1914–23 he was Professor of Modern English Literature at Princeton University, U.S.A.
Poem: The Elfin Artist, **9**, 102

N.S.D.A.P. These initials stood for *Nationalsozialistische Deutsche Arbeiter-Partei* (National Socialist German Worker's Party) of which the leader was Adolf Hitler and which came to be universally hated as the Nazi Movement. The movement began in the Bavarian town of Munich, **2**, 242

N.S.W. means New South Wales.

N.T. means the New Testament.

Nubia is a large district of Northern Africa. It is found on both banks of the River Nile, and parts of it are now included in the Anglo-Egyptian Sudan. The Nubian Desert is on the east bank of the Nile.

Nubian Goat. A variety of domestic goat which yields a large quantity of milk. It is the tallest of goats and its coat is a mixture of black, white, tan and red.
There are both horned and hornless examples, **8**, 319

Nuffield, Lord (born 1878), began life as William Morris, a repairer of bicycles, but became a pioneer in the production of motor cars
He has given vast sums of money to universities, hospitals, and for the furthering of medical research, as well as the foundation of Nuffield College at Oxford.

Nugget is the name given to a natural lump of metal in a practically pure state. The word is most commonly used of gold.
The largest gold nugget ever discovered was "The Welcome Stranger," unearthed at Dunolly, Australia, in 1869. It weighed 2,268 oz

Nullarbor Plain is the name given to the desert tableland extending from south-eastern Western Australia into south-western South Australia and crossed by the railway from Perth to Adelaide, **3**, 220
Picture: **10**, 265
Pictorial Map. **3**, 242

Numismatics is the science of coins and medals. See *Coins.*

Numitor. A king who ruled over a small State in the land we now call Italy, **2**, 47

Nuncio is an ambassador from the Pope of the first rank, not being a cardinal. A papal ambassador of the first rank who is a cardinal is called a Legate.

Nuneaton is a town of Warwickshire having many industries. George Eliot the novelist was born here.

N.U.R. means National Union of Railwaymen.

Nuraghi is the name given to stone dwelling houses as set up by primitive people centuries ago in Sardinia.
Picture **4**, 139

Nuremberg is a city of Bavaria, Germany, known best for its toys, though it has many other industries
It was noted for its old buildings and walls, but was severely damaged during the second World War, **4**, 79
The name is also spelt *Nurnberg.*

Nuremberg Tribunal was an international court of law set up by the Allies after the Second World War to try Germans who were regarded as war criminals or had committed crimes against humanity. **2**, 258

Nuri Said and **Nuri Shalaan** were trusted lieutenants of Lawrence of Arabia, **2**, 387

Nursery Rhymes, handed down by tradition, have been in existence for centuries, while others have been written in more recent times. Probably the first published collection in Britain was *Mother Goose's Melody* which contained some twenty pieces. Some of these are believed to have been written by Oliver Goldsmith See *Books for Boys and Girls Nursery Rhymes and Fairy Stories*, **7**, 267

N.U.T. means National Union of Teachers.

Nutcracker is the name given to a dark brown bird having whitish spots. Found in many parts of Europe it is very occasionally seen in this country.
—household appliance used for cracking nuts

Nuthatch. Small bird slaty-grey on the back and buff underneath It has a loud boy-like whistle. About the size of a sparrow, it nests usually in holes in trees
Colour Plate British Wild Birds, **1**, *between* 160 and 161 (Plate 3)

Nutmeg is the name of a tree growing in the Malay Peninsula, the West Indies and other parts It forms pear-like fruits each containing a large seed which is dried to form the nutmeg used in medicine and cookery, **3**, 397

Nuts. The term embraces cobnuts, filberts, walnuts, etc. A nut is really a seed provided with a hard outer casing to protect it during the winter, **1**, 298

Nuwara Eliya. See *Neuralia.*

Nyasa. A large African lake discovered by Dr. Livingstone It is 40 miles wide and some 350 miles in length, **2**, 335; **3**, 370

Nyasaland is a Protectorate adjoining Lake Nyasa and forming part of British South Africa Tobacco, tea, and cotton are important products. Zomba is the capital, **3**, 296

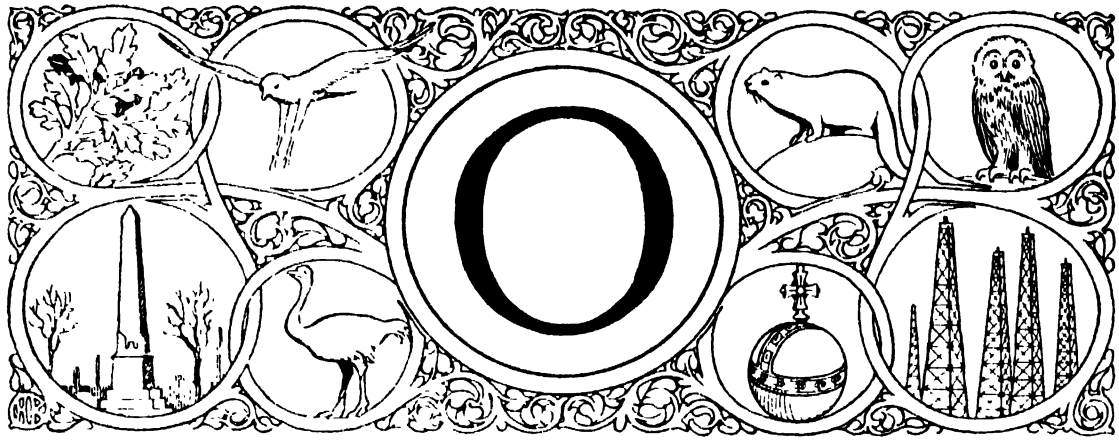
Nylon is a chemically produced fibre made by a complicated process from air, water, and the by-products of coal. In some respects similar to rayon fabric it is stronger and more resilient than silk. The process of its manufacture is described in the Section *From Silk to Rayon and Nylon*, **6**, 345 *et seq* , **6**, 377, **7**, 397
Pictures: All Made from Nylon, **6**, 345
Nylon Monofils, **6**, 353
Making the Nylon Hanks, **6**, 354
Gumming Nylon Hosiery Yarn, **6**, 355
The Last Stage in Nylon Spinning, **6**, 355
Testing Nylon, **6**, 356

Nymphæa is the family name for water lilies and other water plants

Nymph. (1) Name given in ancient times to beautiful goddesses.
(2) The chrysalises or pupæ of certain insects.

Nymph, Water. See *Water Nymph.*

N.Z. means New Zealand



Oadby is a town of Leicestershire, a centre for boots and shoes.

Oahu is the island in the Hawaiian group on which stands Honolulu, capital of the Territory of Hawaii, **4**, 296

Oak. A typical British tree with massive trunk and widespreading branches. It may be as much as 100 ft. in height. Much used for shipbuilding in olden days, it still yields valuable timber, **1**, 395. (*p.h.*).
Pictures: Buds of the Oak, **1**, 282
Oak in Full Leaf, **1**, 324
Oak in Winter, **1**, 325
Trunk of the Oak, **1**, 318
Oak Galls or Oak Apples, **1**, 333
John Bunyan's Oak, **1**, 329
British Oak, **1**, 396
Holm Oak, **1**, 396

Oak-Apple Day. May 29th. This was the birthday of Charles II who hid himself in an oak tree at Boscobel, Shropshire.

Oak Apples, properly called galls, are due to an insect which lays its eggs on twigs of the oak. These gall-nuts are used in making ink.
Powdered, they make an ointment, **1**, 333
Picture: **1**, 333

Oak, Damory's. Name of a famous tree that grew near Blandford, Dorset, **1**, 331

Oak Egger Moth. One of the varieties of moth which can be taken by "assembling," **8**, 285
Picture: **8**, 282

Oakengates is a town of Shropshire, a centre in the iron trade.

Oakham is the county town of Rutland noted for its ancient castle.

Oak Ridge is a new town of Tennessee, U.S.A., and is known as a centre of American atomic research, **4**, 293
Picture: **4**, 283

Oaksey, Lord (born 1880). As Lord Justice Lawrence (*q.v.*) he presided over the Nazi war criminals trial, 1945–46. He became a peer and Lord of Appeal in 1947.

Oak, Turkey. See *Turkey Oak.*

Oakum. A fibre which is obtained from old ropes. It is used for packing or caulking the spaces between the seams of wood in ships.

Oar-Fish. Name given to a species of ribbon fish that may reach a length of 20 ft.
When swimming its head is often held out of water.

O, the fifteenth letter of our alphabet, and the fourth of the five vowels, is pronounced by rounding the mouth and drawing the tongue back. It has four chief sounds, being long in "note" and "vote," short in "not" and "got"; like short U in "son"; and like AW in "off." The letter is often joined with I or U to make a diphthong; and when doubled is equivalent to an open U. The Greeks had separate symbols for short O, which they called Omicron, or Little O, and for long O, which came at the end of their alphabet and had the name of Omega, or Big O.
In chemistry, O is the symbol for oxygen. In O.M. (Order of Merit), O.T. (Old Testament), and O.H.M.S. (On Her Majesty's Service) O is an abbreviation for different words.

Oasis. A fertile spot in the midst of a desert where there is water. Caravans, when crossing a desert, travel from one oasis to another.

Oast-House is a kiln in which hops and malt are dried. It is typical of those parts of the country where hops are grown, such as Kent.
Picture: **3**, 34

Oates, Captain L. E. G. (1880-1912). A companion of Captain Scott in the Antarctic. To save his friends he walked into a raging blizzard, **2**, 375, 376
Pictures: **2**, 368; **2**, 378

Oats. One of the cereals, it is a great farm crop in all parts of this country, especially in the north.
When milled, it forms rolled oats and oatmeal, **6**, 383

ob. means *obit, i.e.*, died.

Ob is the name of a very long river of Siberia. It empties into the Arctic Ocean, **4**, 110

Oban. A port, seaside resort and yachting centre in Argyllshire, **3**, 139
Picture: **3**, 136

O.B.E. means Officer of the (Order of the) British Empire.

Obelisk. A four-sided tapering column, ending at the top in a pyramid. One of the many ancient Egyptian obelisks, Cleopatra's Needle, stands on the Thames Embankment in London. (*p.h.*)

Oberammergau is a village in the Bavarian Alps in Southern Germany and is famous as the scene of Passion Plays. These plays were first held in 1633 and have been held regularly, once every ten years, since 1680, with very few breaks. The Plays tell the story of Our Lord and all the performers in them are inhabitants of the village, **4**, 84
Picture. **4**, 80

Oberon, king of the fairies, appears with his queen, Titania, in the works of Chaucer and Spencer, Shakespeare's *Midsummer Night's Dream*, and Weber's opera named after him.

Obi. A richly coloured silk sash worn by women in Japan, **4**, 248
Picture: **4**, 260

Oboe. This instrument is an orchestral instrument of great possibilities. It consists of a conical wooden tube and a short metal tube to which is fixed the double-reed mouthpiece. It was well-known in the Middle Ages in Europe, and in England, was then called the *shawm.* The instrument was later called the *hautbois* in France, and this word is used to indicate the smallest oboe still in use. The *cor anglais* or *English horn* is a large-sized oboe. See *Musical Instruments; Orchestra.*

Observatory. A building containing apparatus for watching the movements of the heavenly bodies, or making records of weather or magnetic changes.
The oldest modern observatory, and probably the most famous in the world, is the Royal Greenwich Observatory, which after over 270 years at Greenwich is being moved in stages to Herstmonceux Castle, Sussex.
See *The Early Astronomers*, **7**, 349 *et seq.*
See also *Greenwich, Lick, Mount Wilson* and *Palomar.*

Observer. Member of the crew of an aeroplane given the duty of making aerial observations.

Obsolete Stamps. The postage stamps

of countries or states which no longer issue stamps.
Pictures: 4, 414

Obverse, on coins, is the side containing the "head"; reverse is the tail side, 8, 291

Obydos is a town of Brazil, on the Amazon, 2, 340

O.C. means Officer Commanding.

Ocarina, or Ocharina. This is a small musical instrument usually made of *terra cotta* and pierced with finger-holes, and has a mouthpiece used like a whistle.
See *Musical Instruments.*

Occulted means hidden from sight. A heavenly body is said to be occulted when another one gets between it and the earth.
Many lighthouse lamps are occulted at regular intervals by a revolving screen.

Ocean. The continuous water surface which forms 71 per cent. of the total surface of the earth. The Pacific Ocean has an area of just under 64 million square miles while the Atlantic has 31½ million. The two other great oceans are the Indian, 28½ million square miles, and the Arctic over 5½ million. The Pacific has the greatest depth, being 35,410 ft. deep off Mindanao.
See "Ocean Depths," *Atlas Supplement,* end of this Volume.
The salt content of the ocean is about 3½ per cent.
The study of the oceans is known as *Oceanography.*

Ocean Greyhounds and River Whippets. See *Ship.*

Oceania is the name given to groups of islands in the Pacific, *i.e.,* Melanesia and Polynesia, 2, 314

Ocean Island. An island of the Gilbert and Ellice group in the Pacific. It has large deposits of phosphate rock, 3, 391

Ocelot. One of the smaller cats, to be found in tropical America, 1, 54

Ochil Hills. A range of hills in the counties of Clackmannan, Kinross, Fife and Perth, Scotland, 3, 114

Ochre. A form of paint prepared from a kind of clay mixed with oil. It varies in colour from red to yellow.

O'Connell Bridge. Well-known bridge spanning the River Liffey at Dublin, the capital of Eire.

O'Connell Street in Dublin is named after the famous Irish patriot, Daniel O'Connell (1775-1847), who strove to win Irish independence during the nineteenth century.
Picture: 3, 154

O'Connor, C. Y. (1843–1902). An Irish engineer, he built Fremantle Harbour and the railway to Kalgoorlie in Western Australia. He first put forward the great scheme for pumping water to Kalgoorlie but did not live to see his project realised. His work was carried on by John Forrest (afterwards Lord Forrest), the State Premier of Western Australia, 3, 220

Octavian (63 B.C.–A.D. 14) He was the adopted son of Julius Cæsar. After the latter's assassination, Octavian defeated his rivals one by one; and in 27 B.C. he took the title of Augustus and by A.D. 14 was recognised as Emperor. Under his rule, the Roman Empire found peace and security. The ruins of his forum may still be seen at Rome, 2, 402; 4, 158
Picture: 4, 143

Octet. A musical composition arranged for eight performers.

Octopus. A sea creature having eight arms or tentacles with a mouth in the centre of these arms. It catches its prey with the tentacles.

Octopus, Vegetable. See *Vegetable Octopus.*

Ode. Name given to a lyrical poem or song, composed under strong emotion. Dryden, Keats and Shelley were great ode writers.

Odendaalsrust. A town, about 150 miles from Johannesburg, in the Orange Free State. It is the centre of an area where recent gold discoveries have been made, 3, 292

Odense. A large city of Denmark, capital of the island of Funen, and situated at the mouth of the river Odense.
It was the birthplace of the famous author Hans Andersen.

Oder. A river of Germany which now forms the eastern boundary of that country. To the east is Poland. The Oder rises in Czechoslovakia and flows through Silesia where Poland now has an important industrial region, 4, 128

Odessa is a large town and port of the Ukraine, in the Soviet Union. It is situated on the Black Sea coast and is a great trade centre, 4, 106

Odin is a god in the folklore of Scandinavia. He dies each year just after Christmas so that the New Year may be born. He was also called Woden. Wednesday is named after him.

Odontoglossum. Name given to a branch of the orchid family of flowering plants. They originate in America, 1, 364
Picture 1, 367

Odysseus, in the Greek legends, was King of Ithaca and a powerful fighter for the Greeks against the Trojans. The *Odyssey* is the name of one of Homer's great works dealing with this hero, 2, 402; 5, 372
Pictures Tied to the Mast, 5, 374
Circe and the Swine, 7, 121
Odysseus Returns to Penelope, 7, 124
—*Odysseus and the Enchantress.* A tale from the myths and legends of the Greeks, 5, 376

Œdipus Tyrannus is the title of a tragedy written by Sophocles, 7, 121

O.E.E.C. stands for the Organisation for European Economic Co-operation (*q.v.*).

Oersted, Hans Christian (1777–1851). A Danish physicist, he discovered that a magnetic needle was deflected by a current in a wire passing above or below it, 7, 354

Offaly is a county of Eire, in the Province of Leinster. It was once known as King's County and contains the Bog of Allen.
The county town is Tullamore.

Offa's Dyke was a rampart, the remains of which can still be traced from Flintshire to Monmouthshire, built by Offa, the famous King of Mercia, in the eighth century A.D.

Offenbach. An industrial town of Germany, in the province of Hesse. It stands on the River Main

Official means duly appointed; issued by authority. Speed and other records are accepted as correct only if they have been timed by an official observer, that is, one given the office of doing so by some society or other authority.

Off-Sets are the small bulbs that form at the base of large old ones, as in tulips, garlic, etc.

Off-side. Term used in Association football. Law 11 of the F.A. rules states: A player is off-side if he is nearer his opponents' goal-line than the ball *at the moment the ball is played unless* (*a*) He is in his own half of the field of play, (*b*) There are two of his opponents nearer to their own goal-line than he is; (*c*) the ball last touched an opponent or was last kicked by him, (*d*) he receives the ball direct from a goal-kick, a corner-kick, a throw-in or when it is dropped by the Referee.
For an infringement of this law, an indirect free-kick shall be taken by a player of the opposing team from the place where the infringement occurred. A player in an off-side position shall not be penalised unless, in the opinion of the referee, he is interfering with the play or with an opponent, or is seeking to gain an advantage by being in an off-side position.
Picture 10, 97

Oficina is the name given to a factory in South America, 4, 323

Oglethorpe, James Edward (1696–1785). A British general and philanthropist, he worked to help debtors by settling them in America. His settlements were the beginning of the present State of Georgia, 4, 261

Ogre, in ancient folklore, means a huge giant.

Ohlenschlager, Adam Gottlob (1779–1850). Danish dramatist and poet best known for his historical dramas.

Ohio. A river of the U.S.A., which forms for part of its course the southern boundary of the State of Ohio. It flows into the Mississippi.
Picture: 4, 288

Ohio, a State of the U.S.A. Has Lake Erie on its northward side, its interests being extensively concerned with agriculture, though it has also mineral wealth and many industries. Columbus is the capital.
Pictorial Map: 4, 291

Ohm, George Simon (1787–1854). His name, through his discoveries, was assigned to a measure of electrical resistance, 7, 370

O.H.M.S. means "On Her Majesty's Service." When officially printed on Government envelopes no postage stamp is required as the letter is to or from a Government department.

Oil-Cake for feeding cattle is made from linseed, and other oily seeds, from which most of the oil has been previously squeezed.

Oilcloth is used as a covering for floors. It has canvas as its base,

impregnated with glue and other substances. When rendered smooth by rolling this is coated with special paint.

Oils. Petroleum is a mineral oil; it gives us petrol, paraffin and fuel oil, as well as paraffin wax from which candles are made.
Vegetable oils come from seeds and nuts. Animal oils are obtained from fish and the fat of many other creatures.
See also, *Oil, This Age of.*

Oil, This Age of. About petroleum, petrol and other oils; how they are obtained and prepared for commerce, **6**, 305 *et seq.* See also *Petrol, Petroleum.* (*p.h.*)
Pictures: An Oil-refining Plant in Britain, **6**, 305
A Store Park at a Venezuelan Refinery, **6**, 306
"Roughnecks" Working at the Drill, **6**, 307
Oil Pipes at Curaçao, **6**, 308
Oil from Below the Lake, **6**, 309
A Refinery for Aero-engine Oil, **6**, 310
Britain's Greatest Oil Refinery, **6**, 311
At One of Curaçao's Refineries, **6**, 312
How the Geologists "Shoot" for Oil, **6**, 313
Seen in a Texas Oil Town **6**, 314
The Drilling Crew at Work, **6**, 315
Constructing a Pipe-line, **6**, 316
Plant for Making Aviation Petrol, **6**, 316
A Tanker from Venezuela, **6**, 317
Unloading Oil at a British Port, **6**, 318
Colour Plate: Boring for Oil by Turbine, **6**, *Frontispiece*

Oise. Name of a river and a department, both in Northern France. The district is largely agricultural. Beauvais is the capital of the department.

Oiticica. A tree native to Brazil which yields a special oil used to make paints and varnishes dry quickly, **4**, 392

Ojibwa is the name of a tribe of Red Indians.

Okapi. An animal about as large as a mule found in the Congo district of Africa. It is akin to the giraffe and the males are horned.

Okehampton. A town of Devon on the fringe of Dartmoor. It is a marketing centre for a large agricultural district.

Oklahoma is one of the Central States of the U.S.A. It has agricultural interests and the chief industry is oil refining. There are Indian Reservations in the State.
The capital is Oklahoma City.
Pictorial Map: **4**, 290

Old Age Pensions Act. The first Act of this kind came into force in 1909 and provided a weekly pension for persons over 70 years of age who fulfilled certain conditions, **2**, 226

Old Bailey. A famous thoroughfare in the City of London. Here, formerly, stood Newgate Prison, but the site is now occupied by the Central Criminal Court still known as the Old Bailey. It deals with criminal offences committed in the City of London, Middlesex, and parts of Kent, Surrey and Essex.

Old Castile is a district of Spain running southwards from Santander to the Sierra de Guadanama north of Madrid, **2**, 350

Old Crocks. Name given to pioneer motor cars. Trial runs for old crocks were held between London and Brighton.
Picture. **5**, 163

Oldenburg. A large republic of Germany in the west of the country. It has a capital of the same name.

Old English is the name given to a popular breed of domestic rabbit, **8**, 322

Old English Sheep-Dog. A type of sheep-dog having a long coat, hairy face and no tail. These animals are most intelligent at their work.
Picture. **10**, 111

Old Faithful is one of the best known natural geysers in the Yellowstone National Park, U.S.A.
Photo-tone Supplement: United States of America, **4**, *between* 272 and 273

Old Glory is the name given to the Stars and Stripes, the National Flag of the U.S.A.

Oldham is one of the cotton towns of Lancashire. There are collieries and foundries in the district, **3**, 86

Old Lady of Threadneedle Street is a name often given to the Bank of England.

Old Man, a popular name for the fragrant shrubby plant Southernwood. It is also called Lad's Love.

Old Man is a peak of the Coniston group of mountains in the Lake District. It is 2,633 ft. in height.

Old Man of the Sea. A remarkable character of whom we read in *The Arabian Nights' Entertainments* where Sindbad the Sailor tells of his voyages.
Picture: **10**, 195

Old Man's Beard. Name given to the wild hedgerow clematis. It is also known as Traveller's Joy, **1**, 305
Picture: **1**, 195

Old Masters. A term much used in art circles for the work of the best painters of olden times, **8**, 49

Old Palace Yard. See *Palace Yard.*

Old Pretender. The title by which Prince James Stuart, son of King James II was known. See *Prince James Stuart.*

Old Sarum. The name of a city which had become deserted as the new Salisbury arose nearby. Even so, it was represented in Parliament by two members until the passing of the Reform Bill (1832), **2**, 210

Old Shellover. A Poem by Walter De La Mare, **9**, 115

Old Woman, There was an. A Poem by Anon., **9**, 108

Oleander. A shrub which bears large pink flowers. The plant is poisonous and the leaves irritate the skin, **1**, 348

Olfactory Nerve is that part of our bodies that gives us a sense of smell. It connects the nose with the brain.

Olive. A small evergreen tree that produces a valuable fruit. Olive-oil is pressed from the fruit and the fruit itself is used in pickled form. **Olive groves** are found in the countries of the Mediterranean. Olive oil is also used in the manufacture of soap and ointments.

Oliver was one of the heroes of the reign of King Charlemagne. He figures in the great French poem *The Song of Roland,* retold in *The Treachery of Count Ganelon; Roland Sounds His Horn,* and *The Death of Roland and Oliver,* **5**, 409 *et seq.*

Oliver Twist. The title of one of the best-known stories by Charles Dickens. Oliver was the boy who asked for more, and the book had a profound influence in improving the methods on which workhouses were conducted, **7**, 215
Picture: **7**, 215

Olympia. (1) Name of the place in Ancient Greece where the festival of the Olympic Games was first held, **2**, 19
(2) A large centre in London for exhibitions, military tournaments and entertainments, adjacent to Addison Road Station.
(3) Capital of Washington State, U.S.A.

Olney is a small town of Buckinghamshire, on the River Ouse. It was for a long while the home of the poet Cowper.

Olympic Games. Athletic festivals promoted in Ancient Greece, contests being held every four years at Olympia. Revived in 1896, **2**, 19; **9**, 402
Pictures: **2**, 19; **10**, 273

Olympus. Name given to several mountains in Ancient Greece. The snow-capped summit of one of these was said to be the home of the Gods, **2**, 26
—Mount Olympus today is one of the mountains separating the Plain of Larissa from the Plain of Salonica. It overlooks the Gulf of Thermai and is 9,571 ft. high, **4**, 158
Picture. **4**, 157

O.M. means the Order of Merit, a special distinction for eminent men and women. It does not confer a knighthood. With the exception of foreign honorary members, the number of those belonging to this Order is limited to twenty-four.

Omagh is a city of Tyrone, Northern Ireland, the capital of the county. It is noted for linens.

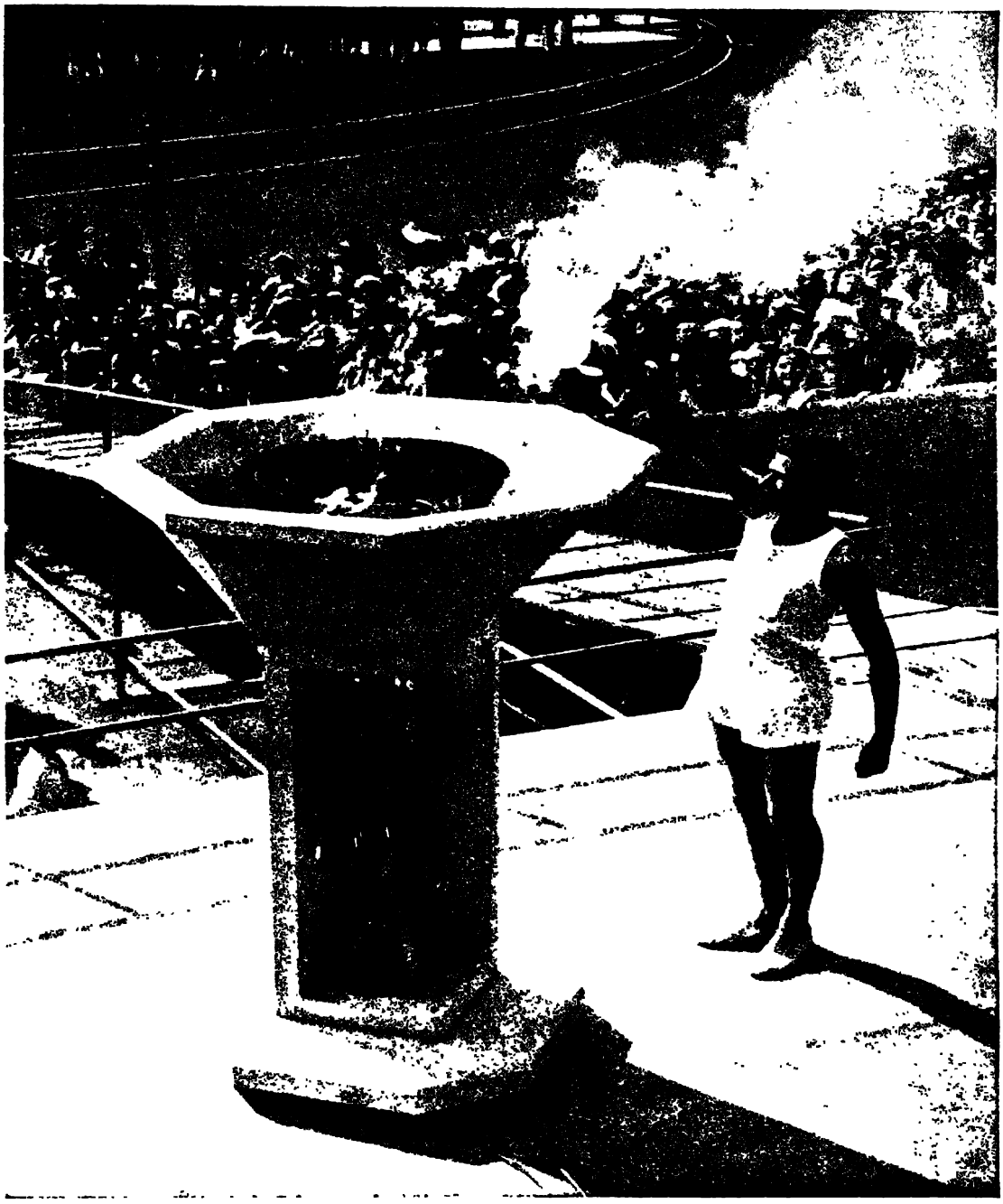
Omaha is the principal city of Nebraska U.S.A. It is famous as a centre of meat-packing.

Omar Khayyam (twelfth century). The celebrated Persian poet who wrote the *Rubaiyat,* a poem which was translated into English by Edward Fitzgerald.

Omdurman is a town of the Sudan on the River Nile facing Khartoum. Here Lord Kitchener subdued the Dervishes in the Battle of Omdurman (1898). Serving with the 21st Lancers which took part in this battle was a young officer, Winston Churchill, later Prime Minister of Gt. Britain during the World War of 1939–45, **2**, 222

Omega, or Great O, was the last letter of the Greek alphabet, as Alpha was the first.

THE FLAME FROM OLYMPIA



Olympic Photo Association 1948.

Kindled in the ruins of the Temple of Zeus at Olympia in Greece, the Olympic Flame was carried across Europe by athletes on a 2,000-mile journey to Britain's Wembley Stadium to open the XIVth Modern Olympiad in 1948. So ancient and modern times are linked in the revival of the *Olympic Games* (see p. 272) that brought Greek manhood to Olympia to race for a laurel crown and to bring peace to the cities of ancient Greece for so long as the Games lasted. The XVth Modern Olympiad was held at Helsinki in Finland in 1952.

Ommanney, Captain. Commanded one of the expeditions sent out to search for Sir John Franklin and his companions, **2**, 303

Omnibus is a word meaning "for all." It was given to public conveyances carrying passengers. Omnibuses were first seen on the London streets in 1829, **5**, 165; **9**, 328, 358
Pictures: The Three-Horsed Omnibus, **5**, 164
A Bus with Outside Seats, **5**, 165
A London Omnibus of Today, **5**, 167

Omsk is a large town of Siberia, in the Soviet Union. It stands on the great Trans-Siberian Railway.

Onager was the name given to a military weapon used in warfare in early times. Its purpose was to hurl missiles against the enemy.

Onager. The wild donkey still found in Syria, Persia and certain parts of India, **1**, 93
Picture: **1**, 94

Oncidium. A plant found in South American forests. It bears a mass of pale yellow flowers covering stalks many feet in length, **1**, 366

O'Neill is the name of a celebrated Irish family. From the O'Neill family descended the Kings of Ulster, **3**, 148

Ontario is a province of the Dominion of Canada. It has a flourishing agriculture and rich mineral resources. Such places as Sudbury and Porcupine are important mining centres. Toronto is the provincial capital, and Ottawa, the capital of the Dominion, is also within the province. The main river is the St. Lawrence, and there are important forests.
Picture: **3**, 169

Ootacamund. A hill station in the province of Madras in the Dominion of India to which Europeans who can leave Madras go in the hottest weather, **3**, 321

Open-Hearth Steel. See *Steel, Open-Hearth.*

Opera. A musical play, of which the orchestral accompaniment is an important part. In opera the actors sing, instead of speaking, their parts.
The first operas were Italian; and none was written in England till the seventeenth century. Some of the most famous operatic composers are Rossini, Verdi, Mozart, Gounod and Wagner. See *Music.*

Ophir was the name of a liner in which the Duke and Duchess of York (afterwards King George V and Queen Mary) made a world tour in 1901, **2**, 230

Ophiuchus is the name of one of the star groups or constellations.
Picture: **8**, 169

Opium. A drug produced in the East from the juices of the poppy.

Oporto is the second city of Portugal and a centre of the port wine trade, **4**, 137, 366

Opossum. An animal something like a rat with long snout and tail. The true Opossum is found only in America, but the Phalangers of Australia are also known as "Possums" or "Australian Opossum," **3**, 245
Photo-tone Supplement: Wild Life in Australasia, **1**, *between* 336 and 337

Opposition means a state in which one thing resists another or is diametrically opposite to it. In the Houses of Parliament the word is used for the chief party opposing the Government, and Her Majesty's Opposition is an essential and recognised part of our parliamentary system. The Leader of the Opposition is now a recognised post and the one who holds it receives a salary of £2,000 a year, **9**, 57

Optic Nerve. Name given to the nerve by means of which we have the blessing of sight. It connects the eyes with the brain.

Optics is the science of light and vision. An optician is one who deals mainly with that aspect relating to the eyes and the correction of defects by lenses. Spectacles, microscopes and telescopes are optical devices for aiding vision.

Oracle. An answer given by a god to a question, but often used of the deity itself. The ancient Greeks frequently consulted Oracles, their actions often being decided by the answers received although these could often be interpreted in more than one way. The Oracle at Delphi was one of the most famous, **2**, 2
Picture: **2**, 3
Special Colour Supplement: In Ancient Greece, **7**, *between* 336 and 337

Oran is a port and commercial centre of Algeria.

Orange is the name of a river of South Africa. It rises in the Drakensburg Mountains and flows to the Atlantic. In length it is about 1,300 miles and for part of its course it is the boundary between Cape Province and the Orange Free State, **3**, 277, 286
—Bartholomew Diaz sailed by the mouth of the Orange River, **2**, 287

Orange. The fruit of an evergreen tree, *Citrus aurantium*, originally natives of Asia, but now grown in most warm countries. The chief varieties are the Jaffa, the Maltese Blood, the Tangerine, the Mandarin, all sweet oranges; the Seville orange is bitter and used mainly for making marmalade.
Pictures: Jaffa and Gaza, **4**, 188
In a California Orange Grove, **4**, 292
—Seedless oranges first came from Bahia, Brazil, but are now grown in other countries, **1**, 383

Orange Ball Tree. Name given to the hardy shrub Buddleia globosa.

Orange Free State. A province of the Union of South Africa famous for stock-rearing and grain products. Bloemfontein is the provincial capital, and is also the judicial capital of the Union, **2**, 225; **3**, 278
Picture: **3**, 302

Orang-Utan. An ape which makes its home in the forests of Borneo. Very powerful, it flies into fits of rage, **1**, 100
Pictures: Baby Orang-utan, **1**, 100
Orang Fully Grown, **1**, 100
Photo-tone Supplement: **1**, *between* 96 and 97

Oratorio. A musical drama of a sacred or semi-sacred character. It resembles an opera in that all the words are sung, to the accompaniment of an orchestra. At the same time, an oratorio is performed without the use of costumes or scenery. The most famous oratorios were written by Handel, Mendelssohn, Haydn and Spohr.

Oratory is the art of speaking in public. To be a good orator one must give clear expression to one's thoughts in fluent words.

Orb. A sphere or globe. An orb, surmounted by a cross, forms part of the Royal regalia used at a coronation. (*p.h.*)
Colour Plate : Symbols of Royalty **10**, *Frontispiece.*

Orbit is the name given to the path taken by each planet as it revolves around the sun, **8**, 107

Orcades is an Orient liner, the largest and fastest ship on the Australian run. She makes the voyage from London to Melbourne in 27 days.
Photo-tone Supplement: Ships Today and Yesterday, **5**, *between* 272 and 273

Orchard House at Concord, Massachusetts, was the home of Louisa M. Alcott who wrote *Little Women.*
Photo-tone Supplement: United States of America, **4**, *between* 272 and 273

Orchardson, Sir William Q. (1835–1910). A great British painter. He was born at Edinburgh and specialised in pictures of an historical nature.
Picture: On Board the Bellerophon, **2**, 206

Orchestra. A body of musicians who play in concert halls, theatres and elsewhere. The instruments used by the orchestra cover all kinds—brass-wind, wood-wind, strings and percussion. The strings—violin, viola, violoncello and double bass fiddle—are, however, the mainstay of the orchestra. It is thus essentially different from a brass or military band, which uses wind and percussion instruments only. See also *Music*
Pictures: **10**, 277

Orchid. There are more than 5,000 varieties of this plant, some of which fetch enormous prices, **1**, 363
Pictures: Lady's Slipper Orchid, **1**, 363
Lady's Tresses, **1**, 364
Baby-in-a-Cradle Orchid, **1**, 365
Orchid from Colombia, **1**, 367
Slipper Orchid, **1**, 368
Cypripedium Orchid, **1**, 368
Orchid that Lives on Air, **1**, 279

Orchid Hunters, The. About the men who go in search of rare plants, **1**, 363

Orchis, Purple. See *Purple Orchis.*

Orders, Holy, in the Church of England, are three in number, those of deacon, priest and bishop. A deacon or priest is ordained by a bishop; a bishop is consecrated by other bishops.

Orders of Chivalry. In Britain there are nine such orders: Knights of the Most Noble Order of the Garter, K.G.; Knights of the most Ancient and Most Noble Order of the Thistle, K.T.; Knights of the Most Illustrious Order of St. Patrick, K.P.; the Most Honourable Order of the Bath, K.C.B.; the Most Exalted Order of

the Star of India, K.C.S.I.; the Most Distinguished Order of St. Michael and St. George, K.C.M.G.; the Most Eminent Order of the Indian Empire, K.C.I.E.; the Royal Victorian Order, K.C.V.O.; and the Most Excellent Order of the British Empire, K.B.E. In addition there are two recent Orders: the Order of Merit, O.M., and the Order of the Companions of Honour, C.H.

Ore. A natural rock-like compound from which a metal or metals can be extracted. The metal may be distributed in small masses through the ore, or combined chemically with other substances.
The metal is separated from the useless part of the ore by heat or chemical treatment, or by the two combined.

Oregon is one of the Pacific States of the U.S.A. Its interests are mainly those of agriculture and the forests, but it has fisheries and mines. Its capital is Salem.
Pictorial Map: **4**, 290

Orellana, Francisco di. A Spanish explorer and the first European to travel down the Amazon (1540–42), **4**, 134

Organ. This massive instrument, almost an orchestra in itself, is based on the principle of pipe-music. The pipes stand on a soundboard, and air is driven into the wind-chest by bellows. The depression of the keys admits air to the pipes and produces the sound. The keys are arranged in rows called "manuals," of which there may be one, two or three. Pedals for the feet form an additional keyboard.
There are also "Stops" which are drawn out by the hand to bring a particular pipe or set of pipes into action. In a much simpler form than the modern one the organ seems to have been known in the Roman world in the first centuries of the Christian era, and it was perhaps developed originally from the primitive instrument called *Pan-pipes* (*q.v.*).

Organisation for European Economic Co-operation. This is the name given to the system by which American aid is granted to the countries of Europe whose shortage of American dollars makes it hard for them to recover fully from the effects of the Second World War. The plan is commonly called "Marshall Aid," being named after the United States Secretary of State who suggested that America should help in this way in 1947. All nations in Europe were invited to take part in the scheme and sixteen countries accepted. American approval of the scheme was given in the Economic Co-operation Act of 1948. The headquarters of the organisation is in Paris, **2**, 258, 415

Organism. A living thing which has organs or parts, each performing its special work. All animals, birds, fishes, insects, reptiles, molluscs and plants are organisms.

Organist Tanagar is the name given to a small bird of the West Indies, black and orange in colour and famous for its musical powers.

Oriel College, Oxford, dates back to 1326.
—associated with Cecil Rhodes, **2**, 219
Picture: **3**, 28

Oriel Windows are windows built out from the wall of a building.
Picture: **3**, 28

Orient means the position where the sun rises, *e.g.*, the east. It refers to the eastern parts of the world, such as China and Japan, whose peoples are sometimes called Orientals.

Orient Line. A line of steamships established 1877–8 for voyages between London and Australian ports.
Pictures: A Stream-lined Funnel, **5**, 260
The *Orion*, **5**, 263
Photo-tone Supplement: Ships Today and Yesterday (*Orcades*), **5**, *between* 272 and 273

Oriental Bay is a bay of North Island, New Zealand on Cook Strait. On its shores stands Wellington, the Dominion capital.
Photo-tone Supplement: Capital of a Dominion, **3**, *between* 256 and 257

Oriental Poppies. See *Poppies, Perennial*

Orinoco is the name of the major river of Venezuela in South America. Its upper reaches lie in the neighbouring republic of Columbia, and during the rainy season the river can be navigated this far. Some of its 436 tributaries are also navigable. Sir Walter Raleigh led an expedition to the river, **2**, 158

Oriole. Name given to a family of birds which are well-known in Europe. They are shy and restless and have brilliant plumage. The Golden Oriole is found in Southern Europe, Asia and N. Africa and is a somewhat rare visitor to Britain, but a certain number reach the southern counties each year. The colour of the male bird is a striking yellow and this leads to its capture, a fact which tends to make them very rare in this country. They are about the size of a thrush.

Orion is a well-known British ocean liner of 23,000 tons belonging to the Orient Steam Navigation Co.
Picture: **5**, 263

Orion is the name of one of the star groups or constellations. It possesses a great nebula.
Picture: **8**, 171

Orissa is a state of the Indian Union. Its capital is Cuttack. Rice is the main product, but jute is also cultivated, **3**, 346

Orizaba is an extinct volcano of Mexico, rising to 17,400 ft.

Orkney is the name of a group of islands off the north coast of Scotland. They once belonged to Norway and in remote times were inhabited by the Picts. About thirty of the islands are inhabited. They form a Scottish county, the principal town being Kirkwall, **3**, 140

Orleans is a large city and great business centre of France standing on the River Loire. It is associated in history with Joan of Arc, who was the Maid of Orleans, **2**, 130
Picture: The Relief of Orleans, **2**, 132

Ormer. See *Ear-Shell.*

Orme's Head. Tall promontories on the Carnarvonshire coast of North Wales. Great Orme's Head is 680 ft. high and Little Orme's Head 464 ft. They are near Llandudno.

Ormskirk. A town of Lancashire. It has many industries and is a centre of a seed and potato-growing district.

Ornate. Richly or highly decorated. Milan Cathedral is externally the most ornate building of its kind. It is built of white marble and its roof is ornamented with a large number of pinnacles and statues.
Picture: **7**, 309

Ornithologist is the name given to one who takes up the science of ornithology, which means the study of birds.

Oroetes. Governor of Sardis in Lydia for Cyrus the Conqueror, **2**, 12
Pictures. The Messenger of Oroetes, **2**, 10
The Guile of Oroetes, **2**, 11

Oroya-Lima line is a railway of South America. It reaches an elevation of 15,665 ft. and runs through the world's highest tunnel, **5**, 138

Orpen, Sir William (1878-1931) Famous British artist, he became A.R.A. in 1916 and R.A. in 1919. Among his famous paintings are the two great Peace pictures shown in the Royal Academy of 1920.
Photo-tone Supplement. Portrait of his Wife and Daughter, **7**, *between* 112 and 113

Orpington. Name of a popular breed of domestic poultry. There is also a *Buff Orpington* breed of duck, **8**, 317

Orris Root, a preparation used by chemists and perfumers. It is obtained from the roots of a variety of iris.

Orthez, Battle of (1814). This battle was fought between the British and French near the French town of Orthez, on the lower slopes of the Pyrenees, well to the east of Biarritz. It ended in a British victory, **2**, 410

Orthodox. In keeping with, or observing, accepted beliefs, customs and methods. The word is most commonly applied to religious beliefs and teaching, and in such a connection is the opposite of heretical.

Orthopædics (*pron.* orth-o-pe-dix) A science which is a branch of medical, surgical and psychological science and deals with the restoration of physical and to some extent mental functions which have suffered through accident or disease. Orthopædic hospitals and centres are widely established in Britain.

Ortolan. A bird of the Bunting family and a native of the Mediterranean districts. Numbers of ortolans are caught in the Riviera and fattened for table.

Orvieto is one of the old hilltop towns of southern Italy. Perched on its volcanic rock, it overlooks a fertile valley, **2**, 152

Orwell is a river of Suffolk connecting

Ipswich with Harwich In its upper reaches this river is known as the Gipping, **3**, 59

O.S. means an Ordinary Seaman, **9**, 404

Osaka is a seaport and the largest manufacturing city in Japan, **4**, 258

Osborne, near Cowes, Isle of Wight, was formerly a royal residence. Nearby was the Naval Training College, **2**, 243

Osborne House, in the Isle of Wight, was where Queen Victoria died (1901), **2**, 221

Oscar. Name given to an annual award of statuettes for meritorious work done in the different branches of film production The awards are made by the Academy of Motion Picture Arts and Sciences in the U.S.A.

Oscillation means a swinging to and fro; a vibration or variation. The oscillations of a clock's pendulum are its swings, those of an electric current are the reversals of current in it

Osier-Beds are found in damp, marshy places, the osiers being pliant shoots from willows used in basket-making and for other purposes

Osiris was an important god in the Egyptian pantheon, the god of the Nile and of agriculture. In another aspect he was the god of the dead, ruling over the tombs in which the dead were supposed to live in ghostly fashion. He was also the great judge, **9**, 9

Oslo, itself a seaport, is the capital of Norway It has industries, manufactures and a large export trade, **4**, 36, 45
Picture **4**, 42

Osman I. (1259-1326). Surnamed "the Conqueror," he founded the Ottoman Empire, becoming master of both Greece and Asia Minor.

Osmium. A metallic, chemical element (symbol Os) found in small quantities in platinum, but chiefly with iridium in the mineral osmiridium

Osnabruck a town of north Germany which stands in the valley of the Hase. Here our King George I, who was also Elector of Hanover, died in 1727, **4**, 84

Osprey. Name given to the feathers of the Great American Egret. (*p.h.*)
Picture. **1**, 168

Ostend is a port and holiday centre of **Belgium**, **4**, 26

Osteopathy is the term used for manipulative surgery, *i.e.*, the treatment of disorders of the bones and the effects of such disorders. It is a recognised branch of the medical profession in Canada and U.S.A.

Osterley. One of the modern railway stations of the London Passenger Transport Board. It is near Osterley Park, Middlesex, formerly a seat of the Earl of Jersey, but now handed over to the National Trust.
Picture **5**, 135

Ostiaks are people of the Soviet Union living in Arctic regions, **4**, 108

Ostler. A man who looks after horses. The word is also spelt hostler. It meant originally one who kept a hostel or inn and looked after his guest's horses.

Ostrich. The largest of all birds, it may stand as much as 5 ft in height, not counting the neck. It uses its wings as sails whilst running and cannot fly. Found chiefly in Africa, it is bred for its feathers, **3**, 289. (*p.h.*)
Picture. **3**, 294
Photo-tone Supplement. Land of the Ostrich and Zebra, **3**, *between* 304 and 305

Oswestry is a town of Shropshire and a manufacturing centre.

Otago. A district of the South Island of New Zealand where there are gold mines, **3**, 264

Otago Harbour is found on the east side towards the south of South Island, New Zealand. Upon it is the town of Dunedin, **3**, 270

O.T.C. means Officers' Training Corps.

Otira Gorge is in the Southern Alps of the South Island of New Zealand Through the Gorge runs the railway linking east and west coasts, **3**, 254

Otira Tunnel, cut through the Southern Alps of the South Island of New Zealand, is said to be the longest railway tunnel in the British Commonwealth, **3**, 270

Otranto. A port of the "heel" of Italy on the shores of the straits of the same name, **4**, 154

Otranto is a 20,000 ton liner of the Orient Line designed for the mail and passenger service between England and Australia.

Otranto, Str. of. This is the name to the narrow channel which leads from the Ionian Sea (and so from the Mediterranean) into the Adriatic. The straits are some 70 miles wide at their narrowest point, **4**, 154

Ottawa is the capital of Canada It is on the river of the same name and is in Ontario. It is a manufacturing and industrial town as well, **3**, 194, **4**, 386
—King Edward VII lays the foundation stone of Parliament House, **2**, 223
Pictures The capital of Canada, **3**, 186
Learning his Trade, **3**, 196
Parliament Buildings, **9**, 41
Canada's Parliament Begins a New Session, **9**, 48

Otter. A water-loving animal which lives in many parts of our country. It has five-toed feet, all webbed, **1**, 126 (*p.h.*)
Picture **1**, 123

Otter Trawl. A bag-shaped net used by trawler crews in deep-sea fishing, **8**, 76

Ottery St. Mary. A market town of Devon. Here may be seen well-preserved stocks.
Picture: **3**, 47

Ottoman Empire. The Ottoman Turks were originally herdsmen and shepherds. But gathering strength and building up a mighty army whose core was the Janissaries (*q.v.*), they carved out for themselves an empire in Asia Minor, gradually extending its frontiers into the Balkans and along the African shore of the Mediterranean. In 1453, they conquered Constantinople and this former capital of the Byzantine Empire became the capital of the Ottoman, or Turkish Empire. Their power grew and at one time they threatened even Vienna. Then decay set in and the Empire which had stretched from the Persian Gulf almost to Vienna and far westwards along the African shore began to shrink. Between 1740 and 1878 Russia took those parts which lay north of the Black Sea, while Greece won her independence. There were further losses between 1878 and 1914 and after the First World War. What remains of the once vast domain is Turkey as we know it today, **4**, 159

Otto of Roses, which is extracted from rose petals and used in scent-making, is worth several times its weight in gold; Bulgaria is famous for its otto of roses, **9**, 239 *et seq*

Oude Canal is a waterway of Holland It flows through the city of Utrecht
Picture **4**, 32

Oudenarde is a linen manufacturing town of Belgium between Courtrai and Brussels, **4**, 24

Oudenarde, Battle of (1708) In this battle the French were defeated by the Duke of Marlborough and Prince Eugene, **2**, 177, 408

Oudtshoorn. A town of the Cape Province of the Union of South Africa. Nearby are the wonderful Congo Caves
Picture **3**, 291
Photo-tone Supplement Land of the Ostrich and Zebra, **3**, *between* 304 and 305

Ouessant is the name the French give to the island of *Ushant* (*q.v.*)

Ouida (Marie Louise de la Ramée) (1839-1908) A novelist who wrote upwards of sixty books, including *Under Two Flags*

Oulton, in Norfolk, was where George Borrow died, **2**, 352

Ounce is the name of a measure of weight. In troy weight it is 1/12th of a pound, in avoirdupois it is 1/16th of a pound.

Ounce. A wild animal of Central Asia also known as the Snow-Leopard from its white coat, **1**, 52

Oundle School. A well-known English public school in Northamptonshire which existed as a Grammar School in the time of Edward VI and was endowed and refounded by Sir Wm. Laxton, Lord Mayor of London who died in 1556. It has been considerably enlarged from 1883 onwards

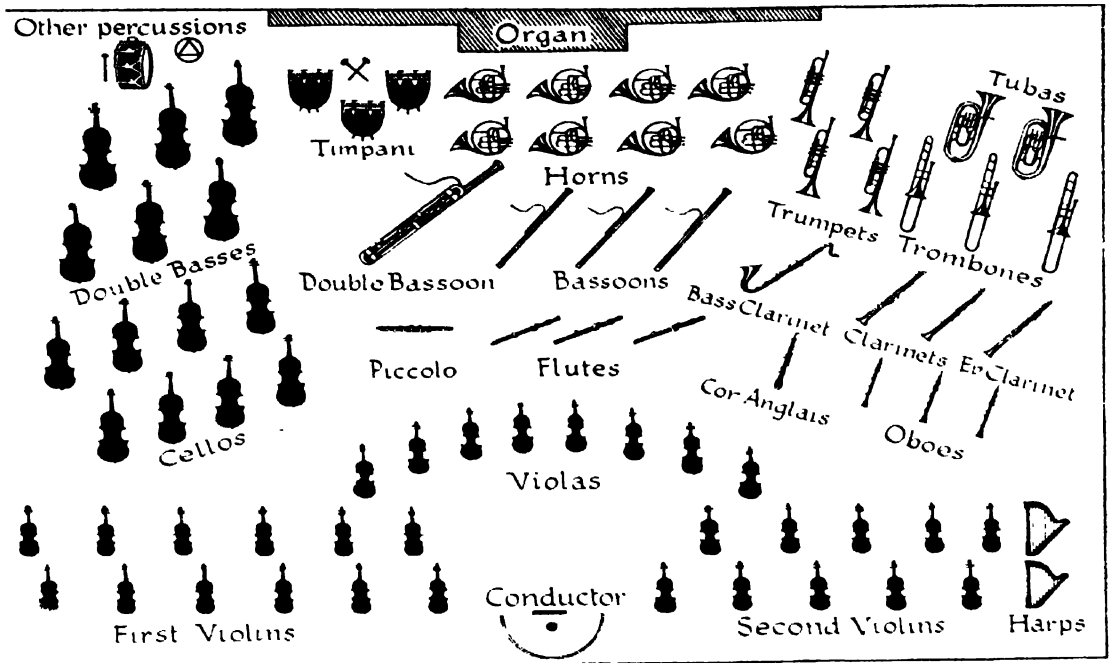
Ourebi. Name of one of the smaller antelope groups of animals found in Africa. Only the males have horns

Ouro Preto is a town of Brazil and the centre of a gold, iron, and manganese mining district.

Ouse is the name of several English rivers. (1) The Yorkshire Ouse flows into the Humber and is a busy industrial stream, **3**, 80 (2) The Great Ouse, which flows through the Fenlands and enters the Wash. (3) The Little Ouse, which joins the Great Ouse; and (4) The Sussex Ouse. See *Sussex Ouse*.

Oust means to turn or drive out; dispossess. Soon after it is hatched, a young cuckoo ousts the young of

POSITIONS IN THE ORCHESTRA



Specially drawn for this work

In this diagram a fairly usual method of arranging the different instruments in a modern *Orchestra* (see p. 274) is shown. strings (the violin family), the wood-wind instruments, the brass instruments, and the percussion instruments. This gives a general arrangement, but minor alterations are made by the conductor



Here we have a photograph of the well-known B.B.C. Symphony Orchestra, with the conductor, Sir Adrian Boult, on the rostrum, with baton in hand. It will be observed that there are slight variations in the disposition of the different "families". Conductors make these changes to suit themselves, or the particular work, or to suit the hall, but the broad arrangement remains much the same.

its foster-parents from the nest to make more room for itself.

Outer Mongolia, Republic of. Formerly a part of China, Outer Mongolia has been independent since 1921, the republic actually dating from 1924. Ulan Bator, previously known as Urga, is the capital. The people are mostly nomadic herdsmen.

Outline Stitch. See *Stem Stitch.*

Outriggers are light rowing boats having their rowlocks supported by brackets beyond the sides of the craft.

Outshoorn. See *Oudtshoorn.*

Ouzel. Name given to a family of birds. In this country, as a summer visitor, we have the ring-ouzel, so called from the marking across its chest; and the water-ouzel, which is not migratory

Ovaries in botany are the part of the flower's pistil that contains the seed. In some fruits they unite to form the core
Picture: **1**, 295

Oven Bird. Name given to a race of birds in South America. They are so-called because they build oven-like nests

Over-Sewing is the method used in needlework when two selvedges have to be joined together, **8**, 407
Picture: **8**, 408

Overture means a piece of music played as the opening part of an opera, oratorio or play.

Ovid, Publius Ovidius Naso (43 B.C.–A.D. 17) A famous Latin poet, **7**, 124

Oviedo is a province and town of north-western Spain near which is an important coalfield with iron and steel works, **4**, 136

Ovipositor. An organ with which the female daddy-long-legs and other similar insects bury their eggs in the ground, **1**, 259

Ovis Poli is the name given by naturalists to a race of mountain sheep in honour of Marco Polo, the traveller, **2**, 268

Owen, Sir Richard (1804–92). Trained as a surgeon at Edinburgh, he catalogued and arranged the Hunterian Museum at the College of Surgeons in London
He also developed the Natural History Museum at South Kensington, London.

Owl. A night-hunting bird of prey, having large eyes extremely sensitive to light. It stands bolt-upright and the head is large on a short neck. Its claws form a trap and its wings are so soft-feathered that its flight is almost without sound.
The Barn or White Owl is the best-known in Britain and is common everywhere in the countryside. It lives in old buildings, church towers, and house gables. The call of the older bird is a loud screech which has earned it the name of the Screech Owl.
The Short-eared Owl visits Britain chiefly in winter, while the Long-eared Owl, like the Barn Owl, is a resident though it is also an autumn and winter visitor.
The Tawny Owl is also known as the Brown or Wood Owl as it is a woodland species. This is the species that gives the long-drawn hooting call *oo-oo-oo-oo* at night.
Other Owls are the Little Owl which now nests in the Midlands and Southern England, while the Snowy Owl is a visitor to the Orkneys and Shetlands. The Hawk Owl, Scops Owl and Eagle Owl are very occasional visitors to Britain, **1**, 171, 186, 190. (*p.h.*)
Pictures: Barn Owl, **1**, 185
Long-Eared Owl, **1**, 184
Special Colour Supplement: British Wild Birds, **1**, *between* 160 and 161 (Plates I and 4)

Owl and the Pussy-Cat, The. A Poem by Edward Lear, **9**, 111

Owl, Burrowing. See *Burrowing Owl.*

Owl, Frog-mouthed. See *Frog-mouthed Owl.*

Owl, The. A Poem by Lord Tennyson, **9**, 104

Oxen. The name given to the males of the animal family Bovidæ. *Ox* is singular.

Ox-Eyed Daisy. Name often given to the moon daisy of the fields, **1**, 301

Oxford. The first city of Oxfordshire and a great English seat of culture and learning. It is the oldest of British universities and was established during the twelfth century. There are some twenty-six colleges, the order of their foundation being as follows: University (1249); Balliol (1262); Merton (1264); St. Edmund's Hall (1269); Exeter (1314); Oriel (1326); Queen's (1340); New (1379); Lincoln (1427); All Souls (1437); Magdalen (1458); Brasenose (1509); Corpus Christi (1516); Christ Church (1532); Trinity (1554); St. John's (1555); Jesus (1571); Wadham (1612); Pembroke (1624); Worcester (1714); Keble (1870); Hertford (1874); Lady Margaret Hall (1878); Somerville (1879); St. Hugh's (1886); St. Hilda's (1893). Several other more recently-established institutions are also connected with the University, **3**, 22 *et seq.*
—besieged by King Stephen, **2**, 98
—Matilda's Escape **2**, 98
Pictures: Towers and Spires of Oxford, **3**, 28
Bump Races at Oxford, **3**, 29

Oxford Gazette. This was the official newspaper produced by Henry Muddiman while the Court was at Oxford during the Great Plague. In 1666 its name was changed to *The London Gazette*, and under this title it is still the official organ of the Government, **9**, 206

Oxford, Provisions of (1258). These provided for a committee to enquire into English grievances; a council of fifteen to guide the king (Henry III); and a Parliament, **3**, 22

Oxfordshire is one of the inland counties of England. Its two rivers are the Thames (Isis) and Cherwell. It is noted for its agricultural crops, dairy farms and orchards. The Chiltern Hills run through part of the county. Witney is famous for its blankets; Henley-on-Thames for its Regatta; and Banbury as a tool-making centre.
The county town is Oxford.

Oxidise. To combine, or cause to combine, with oxygen. If iron is exposed to dampness, its surface oxidises; or, as we commonly say, becomes rusty.

Oxlip. A species of primrose the flowers of which form on a stem like those of cowslip See *Polyanthus*

Oxon. means *Oxonia, i.e.*, Oxford Often used as an abbreviation for the county of Oxford or to indicate the University as B.A (Oxon.).

Ox-Waggons are still used in the country districts of South Africa They are ponderous, four-wheeled vehicles drawn by from a dozen to twenty oxen.
Picture **3**, 303

Oxygen is an element (symbol O) and is one of the gases in the air we breathe. It provides "fuel" for our bodies, and is essential to most forms of life, **8**, 210

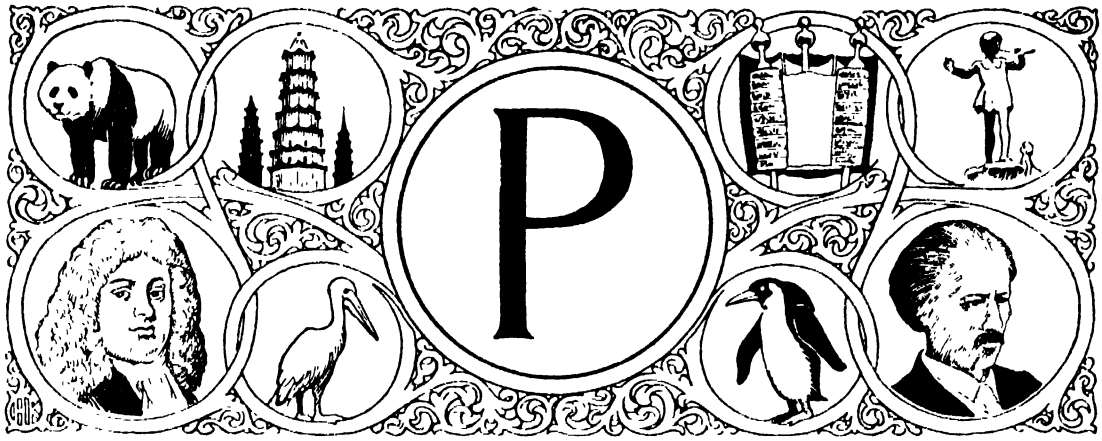
Oxygen-Acetylene Blowpipe. An appliance which burns a mixture of oxygen and acetylene gas. Its flame will cut through steel plates, **5**, 84
Pictures: **5**, 84

Oyster. One of the bi-valve molluscs It spawns from May till August and may produce nearly a million eggs in a season, **1**, 227, 228; **8**, 80
Picture: Packing Oysters for Market, **8**, 76

Oyster-Catcher. A wading bird of the seaside; it has red feet and a bill of similar colour, **1**, 201

Oz. means an ounce.

Ozone is air highly charged with oxygen, which is very refreshing. The bracing effect of the air at the seaside is generally assumed to be due to the ozone in the atmosphere.



Paarl Granite comes from Paarl, a town some 36 miles from Capetown. Paarl means "pearl" and the town is the centre of an important wine district.
Picture: 3, 285

Pacific. A famous class of modern locomotives on the British Railways.
Colour Plate: A.1 Class Pacific on the East Coast Main Line, 5, *facing* 44

Pacific. Name of the largest of the oceans. It stretches from the western shores of America to China and Australia. Because he found its waters so peaceful Magellan gave it the title Pacific, 2, 284

Pack Mule is the name given to a mule when loaded with packs. In many mountainous countries heavy loads are carried mainly by pack mules, 1, 95

Padang is a port on the West coast of Sumatra, 9, 314

Paddington is a metropolitan borough on the west side of London. It contains the London terminus of the former Great Western Railway (opened 1854), now included in the Western Region of British Railways. The headquarters of this Region are at Paddington Station.

Paddle Wheel is the part of a paddle steamer which revolves in the water and propels the vessel. The paddles, sometimes called the blades, are fixed within the wheel, which is turned by the engine. There is a paddle wheel on each side of such a ship, 8, 30, 31
Pictures: The First Practical Steamboat, 8, 34
First British Steamer to Cross the Atlantic, 8, 35
The First Cunard Liner, 8, 36

—the name is given to one of the geysers or natural hot springs of New Zealand, 3, 260

Paddy. This is the name given, especially in the Far East, to rice in the husk. Thus we speak of paddy-fields, meaning fields in which rice is grown, 1, 309; 3, 366
See *Rice.*

Paderewski, Ignace Jan (1859–1940). Born in Poland, he began to play the piano when he was three. He is remembered as one of the greatest pianists who ever lived, and was Prime Minister of his native land for a time, 4, 126. (*p.h.*)

P is the sixteenth letter of our alphabet. It is one of the labials, or lip letters, and closely related in sound to B. Whereas P is "hard," however, or pronounced with a sudden bursting-forth of the breath, B is "soft," that is uttered easily and gently. In many words which we get from the Greek, P is joined to H, the two letters together having the sound of F. The Greeks had no F, but they had one, Phi (PH), which took its place.
P is the chemical symbol for Phosphorus. The letter appears in many abbreviations. For example, M.P. (Member of Parliament); P.C. (Privy Councillor); h.p. (horse power); P.M. (post meridian — after noon).
To "mind one's P's and Q's" means to be accurate or careful.

Padstow, a town, seaport and holiday resort of North Cornwall. It takes its name from St. Petrock, a Welsh saint who landed on this coast. The place was known originally as Petrockstow. The bay is noted for its fine scenery. Into it flows the River Camel, 3, 50

Padua (Padova) in northern Italy was once one of the old city states, and now is the chief town of the province of the same name. Columbus studied at the University, 2, 274; 4, 150; 7, 22
Picture: St. Anthony's Church, 1, 317

Pæan. A Greek hymn to Apollo, or other deities; or a song in praise of heroes which was sung before battle in honour of Ares (Mars), and after victory to Apollo.

Pæonies. Named after the botanist M. Pæon, these are hardy perennial plants with large showy flowers—crimson, pink and creamy white, 8, 280

Pagan means a heathen; one who worships idols or false gods. It is now used chiefly of anyone who has no religion at all.

Paganini, Niccolo (1784–1840). A great Italian violinist who enjoyed world-wide fame, 7, 176

Pageant. A brilliant spectacle or show in which many people take part. One of the great pageants of the year is the Lord Mayor's Show in London. Pageants generally have a historical character and many towns and cities in Britain have held such pageants from time to time to commemorate some of the important incidents in their history.
Picture. 10, 281

Pagoda. This is the name of a kind of sacred tower found in the Far East, especially in China, Japan and Burma.

Pahang is one of the Federation of Malay States. It is rich in minerals and rubber, tin and gold are exported. The capital is Kuala Lipis. 3, 403

Pahs is the name which the Maoris of New Zealand give to their villages, 3, 250

Paignton. Well known seaside resort of South Devon. It stands at the head of Torbay.

Painted Pigeon. A comparatively small bird with gorgeously-coloured plumage. It is found in Australia.

Painting and Painters. The prehistoric and very early paintings were done with coloured earths. In ancient Egypt paintings were done with distemper made by mixing coloured powders with water and then using gum. Among their great achievements painting must have reached a high level in Greece, but unlike their sculpture and architecture practically nothing has survived though fragments of their wall paintings have been found in the buried cities of Pompeii and similar places.
It was in Italy that the art of painting revived and at first it was chiefly wall-painting or frescoes, but to the Netherlands is due the great discovery of how to paint in oils. This was in the fourteenth century and the Van Eyck brothers were the pioneers. Water-colours were also improved and in each country from the fourteenth century onwards different schools of painters have arisen and painting has become one of the greatest of the arts.
The story of the development of painting, with many reproductions of

famous pictures is told in *Great Painters of All Nations*, 7, 1 *et seq.* *See also* entries in this Index under the names of the great painters.
Photo-tone Supplement : Modern British Art, 7, *between* 112 and 113
—For Younger Readers: *First Steps in Drawing*, 9, 145 *et seq*
Special Colour Supplement: Fun With Colours, 9, *between* 144 and 145

Painting, Largest. The largest of the world's famous pictures is Tintoretto's "Paradiso" in Venice, 7, 30

Pairing is a term used in basket-making It applies to work carried out with a pair of weaver canes, 8, 391

Paisley is a large town and port of Renfrewshire, Scotland It is famous for cotton thread and shawls, but has many other industries, 3, 120

Paita is a town on the island of New Caledonia in the South Pacific, 2, 320

Pakistan, Dominion of, was formed in the sub-continent of India in 1947 and is a member of the Commonwealth of Nations Pakistan means literally "land of the pure" and implies politically separation from Hindu India Pakistan consists of Baluchistan, East Bengal, the North-West Frontier, West Punjab, and Sind. These were formerly territories of British India and have a predominantly Moslem population The capital of the Dominion is Karachi. Agriculture is the main industry, and in some parts—Baluchistan, for example—there are deserts. Salt is an important industry of Karachi, and in Bengal there are jute and cotton mills and coal mines, 2, 258, 415; 3, 311 *et seq.*; 4, 369

Palace of the Captains-General is a fine old building in La Antigua, Guatemala, 4, 302

Palace of Versailles. See *Versailles.*

Palace Yard is the name given to an open space at Westminster which now forms an entrance to the House of Commons for members of Parliament, 2, 226
—here Sir Walter Raleigh was executed, 2, 158

Palais de Chaillot is in Paris on the banks of the River Seine. It is used by the United Nations Organisation.
Picture: 4, 11

Palais de Justice is the name given in French-speaking nations to the building containing the Courts of Law. One of the largest buildings in Europe is the Palais de Justice at Brussels, Belgium, 4, 26
Picture: 4, 21

Palapye is a town of the Bechuanaland Protectorate, 3, 294

Palermo is a port and the chief town of the Italian island of Sicily in the Mediterranean, 4, 154

Palestine. See *Holy Land.*

Palestine Man is the name given to the humans who lived in the Holy Land over 50,000 years ago. They were identified by skeletons found in the caverns of Mount Carmel, near Haifa, 4, 186

Palestrina, Giovanni Pierluigi (1524–94). Famous early Italian musical composer who became choirmaster at the Vatican in 1551, 7, 157

Palindrome is the name given to a word or sentence which reads the same backwards as forwards. Reviver, madam and level are examples of such words, a sentence being: "Madam, I'm Adam," the first words of Adam to Eve.

Palisade. A row of posts set firmly into the ground to form a fence or fortification, each post may also be called a palisade.

Palitzsch was the name of an amateur astronomer who discovered Halley's Comet on its return in 1758, 8, 167

Palki is the term used in India to describe a chair carried by four bearers, 3, 348

Palk Strait is the name given to the strip of water separating Ceylon from the south of India.

Pallas is the name of a small planet discovered by astronomers in 1802, 8, 147

Palm. There are a thousand varieties of palm tree, of which the coco-nut palm and date palm are the most useful. Found in all the warmer countries of the world.
Pictures: Avenue of Palms, 1, 311
Native Climbing Palm, 1, 312

Palma, a town and seaport at Majorca, is capital of the Balearic Islands. It was founded by the Romans in 121 B.C., 4, 137

Palmate Newt. A newt with its hind feet webbed when in the water, so forming a hand or palm, 1, 162

Palm Beach, a well-known holiday centre in Florida, U.S.A., 4, 294

Palm Beach is a famous bathing resort of Sydney, Australia, 3, 231

Palm Cat. Another name for the *Paradoxure* (*q.v.*).

Palm, Date. See *Date Palm.*

Palmerston North. A town of New Zealand in the North Island It is interested almost entirely in farm products.

Palmerston, Viscount (1784–1865). A famous British statesman, he entered the House of Commons at the age of twenty-three and became Prime Minister 1855–58 and again in 1859–65. During the latter period he nearly brought Britain into the American Civil War on the Southern side He was known popularly as "Pam"

Palm Grove is a feature of the scenery at Victoria Falls on the Zambezi River, 3, 299

Palmietfontein, is near Johannesburg in the Transvaal Province of the Union of South Africa. It is the most important air centre in the Union, 3, 288

Palm Kernels are an important product of West Africa. From them soap, candles and even margarine are made, 3, 381

Palm Oil is extracted from the fruits of several types of palm tree, the industry being largely carried on in West Africa. Palm oil is used in preparing toilet requisites and for making soap, candles and other goods, 3, 381

Palm Sunday is the Sunday before Easter. It introduces Holy Week and commemorates Christ's triumphant entry into Jerusalem when the populace strewed the road with palm branches.

Palmyra. One of the famous cities of antiquity, its ruins can still be seen in the desert midway between the upper reaches of the Euphrates and the Syrian coast.
Picture: 4, 178

Palomar, Mount. This is an observatory near Pasadena, California, which contains the largest telescope in the world, designed by the well-known American astronomer, the late Dr. George Hale at the partial cost of the Rockefeller Foundation.
Pictures: 8, 164, 168, 173; 10, 19

Palos, on the Gulf of Cadiz, is the Spanish port from which Christopher Columbus sailed across the Atlantic, 2, 276; 4, 132

Palp. A feeler attached to an insect's jaw or mouth.

Paludrine is the name of an anti-malarial drug recently discovered by British chemists, 7, 416

Pamirs. Lofty plateaux in Central Asia, mostly belonging to the Soviet Union but partly to China and Afghanistan. They are known as the "roof of the world"

Pampas are the plains of South America, corresponding to Canadian prairies, 4, 317

Pampas Grass, which produces tall plumes in late summer, is named *Cortaderia argentea*

Pamphlet. A small book of a few pages, with no binding Pamphlets generally deal with some serious subject, such as agriculture, the work of a society, a matter being widely discussed and so on

Pan. A minor god of ancient Greece, represented as half-man, half-goat, he was the patron of flocks and herds He is usually shown playing upon a shepherd's pipe—the pipes of Pan From him comes the expression "panic fear," as his sudden appearance inspired terror.

Panama is a Central American republic with a population of some 600,000. A large part of its area is unoccupied, elsewhere bananas and other crops are grown, 4, 305
Pictures: The City of Colon, 4, 308
Balboa's Statue, 4, 308

Panama Canal is a waterway for ocean-going vessels across the Isthmus of Panama. It is about forty-two miles in length. Started by de Lesseps, the work was eventually carried through by American engineers. Opened 1914, 2, 244; 4, 306; 5, 57
Pictures: At the Gatun Locks, 5, 59
Making the Panama Canal, 5, 60
Linking Pacific and Atlantic, 5, 61
Lake Gatun, Panama Canal, 5, 62

Panama Canal Zone is that part of the Isthmus of Panama through which runs the Panama Canal. It is ten miles wide and is territory administered by the United States, 4, 306

Panama City is the capital of the Central American republic of Panama. It stands near the ruins of the old city of Panama which was sacked by Henry Morgan the buccaneer, 4, 305
Picture. 4, 308

Panama Hats were first made by Indians from the leaves of a palm tree. Quito, Ecuador, is the real home of these hats, 4, 330, 394

Pan-American Highway is a great road

THE PAGEANT OF PERTH



Early in the present century the historical *pageant* (see p. 279) became a popular feature in Britain and during the past half-century many of our old towns have celebrated some notable anniversary in their history by re-enacting scenes from the past. In this picture residents of *Perth* (see p. 288) are re-enacting a procession of prominent townspeople of 1396.



Photos Central Press

Said to have been founded by the Roman, Agricola, in A.D. 70, Perth is rich in historical memories. Many times it has been besieged, and Robert Bruce, Edward III, Montrose and Cromwell, all captured it. It was made a royal burgh in 1210 and was Scotland's capital till 1482. This photo-graph, taken at a Perth Pageant, shows William the Lion reading the Charter of 1210

that will link the U.S.A. to Colombia and South America. Large sections of it are completed, but others have still to be finished, **4**, 297

Panasqueira is a place in Portugal where there are said to be large deposits of tungsten ore, or wolfram, **4**, 366

Panay is an island of the Philippine group. The capital is Iloilo.

Pancreas. An organ situated behind the stomach. It provides some of the digestive juices, **8**, 220, 231
Picture: **8**, 223

Panda. An animal which is a native of the Himalayas. It is similar in appearance to a bear, but only about 18 in. long and has a bushy tail about the same length. Chestnut-coloured fur, but black underneath, it has a ringed tail and white markings on the face.
The Giant Panda comes from China and Tibet and is black and white, **1**, 64 ; **4**, 238 (*p h.*)
Picture: **1**, 64.

P. & O. means Peninsular and Oriental Steamship Co., a shipping line founded about 1835 as the Peninsular Steam Company, **8**, 32

Pangbourne is a town of Berkshire, on the Thames about 5 miles from Reading. It has a nautical college

Pangeran Makota was governor of Sarawak before Sir James Brooke, **2**, 327

Pangolin. Another name for the scaly ant-eater (*q.v.*).

Pankhurst, Mrs. Emmeline (1858-1928) was a famous feminist leader. She led the fight for equal political rights for women, known as the Suffragette Movement, **2**, 231

Pan Ku is said to have been the name of the first Chinese, **4**, 223

Panorama. A complete view in every direction. The word is also used of a picture of such a view, painted on a long canvas which is arranged in a circle round the observer, or is presented a part at a time.

Pan-pipes. This is a very old wind instrument consisting of a series of short pipes (originally reeds) of different lengths each producing one note. The old Greek form was used by shepherds and herdsmen and associated with Pan (*q.v.*) Pan-pipes were probably the origin of the organ.
See *Musical Instruments.*

Pansala is the name given in Ceylon to the houses in which priests live, **3**, 367

Pansy. A member of the viola family easily propagated by seed. Its flowers vary from white through yellow to purple.
Picture: **1**, 369

Pantheon means all the gods of an ancient nation and the name was given to several famous buildings. There is the Pantheon of Rome; the Pantheon of Paris and the Pantheon of the Escorial in Spain, the last-named a burial place for Spanish kings.
Pictures: Outside the Pantheon at Rome, **4**, 143
The Pantheon of Agrippa, **7**, 296
Special Colour Supplement: In Ancient Rome (The Pantheon), **7**, *between* 336 and 337

Panther. Name given in India to the carnivorous animal known elsewhere as the Leopard (*q.v.*), **1**, 50

Panung. This is the name given to a part of the old national dress of Siam, **4**, 210

Papain. This is a digestive fluid obtained from the papaw fruit which, though a native of Central America, now grows extensively in the Transvaal.
Picture: **3**, 295

Papanin, Ivan. Leader of a Soviet expedition that wintered at the North Pole, 1937–38, **2**, 365
Pictures: Four Soviet Scientists who Camped at the North Pole, **2**, 362 and 363

Papaw. A melon-like, semi-tropical fruit, with honey-golden flesh and myriads of tiny seeds in the centre. It contains *papain* which has valuable medicinal uses. The fruit is a native of Central America, but also grows elsewhere, including the Transvaal.
Pictures: **3**, 295, 376

Paper is one of the world's most valuable products. It was first made from leaves and the inner bark of trees and afterwards from the papyrus reed. Cotton and linen rags were and still are used for paper-making, but wood pulp is now very largely employed for machine-made paper, **6**, 329 *et seq.*
Pictures: **3**, 170, 174; **6**, **329**
Bleaching the Pulp, **6**, 330
Making Paper by the Mile, **6**, 331
Pressing and Drying, **6**, 332
Cutting Up a Reel of Paper, **6**, 333
Unloading Esparto Grass, **6**, 334

Paper Nautilus. See *Argonaut.*

Papier-Mâché is a material made from paper, glue and starch, and used in the manufacture of trays, boxes and other articles.
After being moulded, papier-mâché articles are dried and dipped in oil.

Papoose is the name given by Red Indians to a child.
Photo-tone Supplement: The Red Men of America, **9**, *between* 368 and 369

Pappus is the name of the fine hairs that grow on the seeds of certain plants.
Picture: **1**, 372

Papua is the south-eastern part of the great island of New Guinea to the north of the continent of Australia. Port Moresby is the chief town. Gold and silver are mined, and coconuts and rubber are cultivated, **3**, 244, 388

Papyrus is a form of reed from which paper was made more than 4,000 years ago by the Egyptians. Large numbers of these papyri (*pl.*) are still preserved, **2**, 401; **6**, 329; **9**, 6
Picture: Papyrus on which the Ancients Wrote, **8**, 207

Par is a fishing port of Cornwall noted for pilchards.

Para is (1) a river of Brazil sometimes called Rio Para.
Picture: **4**, 318
(2) A State of Brazil whose capital, a port of the Amazon, is known by the same name (or, alternatively, as Belem). Its trade is largely in rubber, cacao, nuts, and timber, **2**, 339; **4**, 314

Parable. A short story which teaches a religious or moral lesson. A parable such as Christ used has been well defined as "an earthly story with a heavenly meaning."

Parabola is the name given to a particular kind of curve. If a cone is cut through parallel to one of its sides, the edges of the two parts are parabolas.

Parachute. An umbrella-shaped device for slowing the descent of a body falling from a height. Airmen are provided with parachutes, folded up in such a manner that they open automatically, or at the pull of a cord, when the wearer jumps overboard, **5**, 226; **9**, 296
Pictures: **9**, 298, 299

Paradise, Bird of. See *Bird of Paradise*

Paradise Ducks are native birds of New Zealand. Though so-called, they are really geese.

Paradise Fish. This creature has very long fins and is striped gold, red and green. It is bred like goldfish in China

Paradise Lost is considered to be the finest work of John Milton. He sold the copyright for £5, **7**, 136

Paradoxure. Name of an animal of the civet cat tribe found in Malaya and parts of Asia

Paraffin Wax is a hard, white wax obtained by distilling petroleum, tar and shale oil. It is used in the manufacture of candles and matches; for waterproofing paper and other materials; and as an insulator in electrical apparatus.

Paraguana Peninsula is a part of the South American republic of Venezuela where a new oil refinery has been set up, **4**, 331

Paraguay is a republic of South America. It is largely a pastoral country with an important stock-raising industry. Meat products are exported and so is tobacco. It has vast timber resources. The population is about 1½ millions. Asunción is the capital, **4**, 326, 393

Parakeet. See *Parrot.*

Parallax. The apparent movement of an object which is due to changing the point of view. This is a term used by astronomers. It may be illustrated simply as follows:
Hold up a finger at arm's length in front of the face. Shut one eye and note what is now in line with the finger, behind it. Then close the other eye. The finger will appear to have jumped sideways in the direction of the closed eye. This seeming movement is the parallax of the finger.

Paralysis means the loss of power in one or more limbs, whilst sensation may pass from other parts of the body.

Paramaribo, on the River Surinam, is the capital of Dutch Guiana.

Parana is a port on the Parana River. From 1852 to 1861 it was the capital of Argentina. It has a beautiful cathedral.

Parana River, 2,450 miles long, is one of the principal rivers of Argentina. For part of its course it forms the frontier between Argentina and Paraguay. Where it flows into the

Plate River estuary, Charles Darwin was arrested, **2**, 344; **4**, 331
Picture: **2**, 343
Paraparamu is an airport near Wellington on the North Island of New Zealand, **3**, 272
Parasite. An animal or plant which lives on another. Fleas, lice and ticks are animal parasites. The mistletoe and orchid are vegetable parasites.
Parasol Ants. Insects of Central America, they belong to a leaf-cutting tribe which strips trees of foliage, **1**, 353
Parchment is the skin of a very young calf, lamb or kid, prepared and made smooth for writing upon. All writing at one period was on parchment before printing led to the invention of paper.
Pariah is the name applied to a member of one of the lowest classes of India commonly called the "untouchables" To them fall the most menial and degrading tasks.
Pariah dogs are the ownerless mongrels of eastern towns and villages.
Paricutin. A Mexican village which has given its name to the volcano which suddenly appeared there in 1943.
Picture: **4**, 300; **9**, 316
Paris, on the River Seine, is the capital of France and of the French Union Its modern history dates from the times of Clovis in the fifth century A D. Its population is nearly three million, **4**, 5 *et seq.*
—occupied by the Germans (1940), **2**, 250
Pictures: The Place de l'Opéra, Paris, **4**, 5
The Heart of Paris, **4**, 6
Notre Dame de Paris, **4**, 7
A Massive "Arch of Triumph," **4**, 8
Where History has been Written, **4**, 9
A United Nations Meeting-Place, **4**, 11
A Parisian Café, **4**, 12
Chamber of Deputies, **9**, 45
Photo-tone Supplement. On the Seine and the Rhone, **4**, *between* 112 and 113
Paris, Treaties of. There were two treaties. The first (1814) restricted France to her boundaries of 1792, and gave Britain Malta, Heligoland, and her French and Dutch conquests The second (1815) limited France to the boundaries of 1790, **2**, 410
Parish Council. A body of men and women elected by the voters of each parish in a rural district to carry out certain minor duties of local government, **9**, 66
Park, Mungo (1771 1806). Scottish traveller, he made a famous voyage of discovery on the Niger. He died during a second expedition in 1805-6, **2**, 322 *et seq*; **3**, 276; **6**, 48
Pictures: In Search of a Mysterious River, **2**, 322
In the Hands of the Moors, **2**, 324
Parker, Sir Gilbert (1862–1932). Well-known novelist, born in Canada. He was M.P. for Gravesend 1900-18. His novels include *The Seats of the Mighty, The Right of Way,* and *Northern Lights.*
Parker, Sir Hyde (1739–1807). British admiral in command of the British fleet sent to the Baltic. Nelson served under him and, ignoring Parker's signal to withdraw, fought and won the Battle of Copenhagen (1801), **2**, 198
Parliament. The history of the British Parliament goes back to the days before the Norman Conquest, when there was a "Witanagemot," or council of wise men, appointed to advise the King. A body somewhat similar to our Parliament was established about 1265. Since that date the powers of Parliament have been extended and those of the King reduced, until at the present time Parliament is practically supreme. The methods of its appointment have also been radically altered until today the House of Commons is elected by all adults, both men and women, over 21 years of age. The House of Lords still remains on a hereditary basis, but its powers have been considerably curtailed, **2**, 106, 108; **9**, 317–318
See also *Our Parliament—and Others; Electing Your M P.; How Laws are Made,* **9**, 40–67; also *Houses of Parliament.*
Pictures Parliament is Opened, **2**, 261
Inside the Houses of Parliament, **3**, 17
John Hampden Makes His Protest, **9**, 51
When the King Took Counsel, **9**, 52
When the Sovereign Drives to Parliament, **9**, 57
Parliament Act (1911). This act had the effect of limiting the power of the House of Lords by providing that money bills sent to the House of Lords and not passed by them within a month should become law on receiving the Royal Assent. It also laid down that the maximum life of a parliament should be five years, **2**, 230
Parliament, Questions in. The putting of questions to Ministers in the House of Commons is one of the main ways in which individual members criticise the work of the various Government departments. A definite period of time each day is allotted to "Questions," and the number of questions asked is usually large. In the case of a question of the first importance, or ones requiring investigation, a Minister may postpone his answer until another day, **9**, 58
Parlour Palm. Name sometimes given to the *Aspidistra* (*q.v.*)
Parma, Alexander Farnese, Duke of (1545-92). This member of the famous Italian Farnese family, was a general and statesman who governed the Netherlands for King Philip II of Spain. It was intended that his army should take part in the expedition against England led by the Spanish Armada, **2**, 148
Parmesan is an Italian cheese, usually made from goats' milk.
Parnassus. Mountain in central Greece, 8,070 ft., regarded as the abode of Apollo and the Muses by the ancient Greeks. See *Helicon.*
Parole is the word of honour given by a captured officer not to attempt to escape if given a certain amount of liberty, or not to take any part in the war if released altogether, **9**, 362
Parr, Catherine (1512–48). She was the sixth wife of Henry VIII (*q.v.*) and survived him.
Parramatta, a town of New South Wales, a short distance from Sydney. It is a manufacturing and commercial centre with fruit farms in its area.
Parrot. Usually a bright coloured bird and one easily tamed. They are abundant in tropical countries, especially Australia and South America. It is a member of a very large family, which includes parakeets, macaws, lories, love-birds and cockatoos, totalling about 500 species, **1**, 195
Picture. **1**, 195
budgerigars belong to the parrakeet family, **8**, 312
Parrot, Grey. See *Grey Parrot.*
Parry, Sir William Edward (1790–1855). Born at Bath, he entered the Royal Navy and reached the rank of rear-admiral He was a great explorer and was one of those who tried to find the North-West Passage.
Picture **2**, 219
Parsley. Biennial herb of the *Umbelliferæ* order The cultivated parsley was introduced into Gt Britain from Sardinia some four centuries ago, and has been used for flavouring and garnishing ever since.
Wild Parsley, also known as Wild Beaked Parsley, is a familiar plant growing in woods and under hedges It has hollow stems and umbels of tiny white flowers, with a profusion of wedge-shaped lace-like leaves
Parsnip. A tap-rooted vegetable which needs a long period of growth, the ground being dug specially deeply.
Parson-in-the-Pulpit is a name sometimes given to the wild arum or cuckoo pint.
Parsons, Alfred. Well-known British artist, he was associated with the New English Art Club, **7**, 111
Picture: **7**, 112
Parsons, Hon. Sir Charles Algernon (1854 1931). Son of the Earl of Rosse, he invented the steam turbine which bears his name. The works which he founded are at Newcastle-on-Tyne, **5**, 256
See also *Turbine.*
Parthenon, the famous marble temple to Athena, erected on the Acropolis of Athens in the fifth century B C. It was one of the most splendid buildings of ancient times, **7**, 286
Picture. **7**, 294
Special Colour Supplement: In Ancient Greece, **7**, *between* 336 and 337
Parthians. A people living in ancient times in the mountains to the south-east of the Caspian Sea. They were great warriors and once ruled a powerful empire
Picture. **4**, 197
Partridge. A nut-brown bird that nests on the ground; it remains with us all through the year, **1**, 166
Special Colour Supplement: British Wild Birds, **1**, *between* 160 and 161 (Plate 4)
Part-song. A vocal piece of music in three or more parts. Usually the tune or melody is in the highest part In the madrigal, on the other hand, each of the parts forms a tune in itself.
Pasadena is a city of California, U.S.A., interested in fruit canning. Near by

are the Mount Wilson and Lowe Observatories.

Pas-de-Calais is the name given to a county or department of Northern France. It has coal-fields, but its interests are mainly agricultural. The capital is Arras, and other well-known towns are Calais and Boulogne

Paseng. Name given to a tribe of wild goats found in parts of Asia

Paseo de la Reforma is the name of one of the fine boulevards in Mexico City It is lined with statues and monuments, 4, 299
Pictures Mexico's Independence Monument, 4, 299
Paseo de la Reforma, 4, 300

Pasig. The name of a river of Luzon, the largest island in the Republic of the Philippines. Manila, the capital, stands on this river
Picture 4, 209

Pasin. This is the name given to a part of the old national dress of Siam, 4, 210

Passau is a fortress city of Bavaria, Germany, on the River Danube, 4, 88

Passchendaele is a village of Belgium, famous as the scene of one of the great battles of the war of 1914–18, 2, 239

Passion Play. This is the name given to a representation of the Passion of Our Lord, *i e*, the immediate events leading up to the Crucifixion and the Crucifixion itself. Probably the most famous Passion Play in the world is that given every ten years at the village of Oberammergau in the Bavaria. Alps, 4, 84

Pass of Killiecrankie. A famous Scottish pass leading up Glen Garry. It is near Blair Atholl, 3, 124

Pass of Thermopylæ. See *Thermopylæ, Pass of*

Passport. A warrant or document issued in this country by the Passport Department of the Foreign Office, permitting the person to whom it is issued to visit certain other countries and granting the protection of Britain (or the country issuing it) to the holder. British passports are valid for five years and the fee is 15s

Pastel is the name given to a picture or drawing carried out in crayons.

Pasteur, Louis (1822-95). A French chemist. He was a pioneer in antiseptic methods and proved that fermentation proceeds from living organisms, 2, 220; 7, 382
Pictures: A Great Benefactor of Mankind, 7, 383
Pasteur in His Surgery, 7, 380
In the Pasteur Institute, Paris, 7, 384

Patagonia is a vast tract of country forming the southern part of South America. It is partly in the Argentine and partly in Chili, the division being marked by the Andes.
Sheep and cattle are reared where conditions are suitable and there is both timber and mineral wealth. The natives are of notably tall stature.

Patching is an important part of home needlework and material to match the piece should be used, 8, 413
Pictures: How a Patch is Applied; The Worn Part Cut Away, 8, 412

Pateley Bridge is a town of the West Riding of Yorkshire standing on the River Nidd. There are lead mines in the vicinity and some interesting caverns.

Patent means protected by a document called "letters patent," issued by the Crown.
An inventor of a novel device protects himself against having his ideas stolen by other people by securing a patent for it. The payment of certain fees then gives him for a term of years the sole right of manufacturing or making profit out of it, 9, 407

Paternoster. Name for the Lord's Prayer from the opening words in Latin.

Paternoster. The name of a piece of tackle used in sea-angling, 8, 257
Picture 8, 251

Paterson, William, was a Scotsman whose ideas led to the establishment of the Bank of England (1694) of which he became a director.
Picture 2, 176

Pathans. A frontier people of North-West India and Afghanistan, 3, 340

Patiala is a large state of the Punjab, Dominion of India. It has a capital of the same name.

Patmore, Coventry Kersey Dighton (1823–96) Well-known English poet; friend of Ruskin and Tennyson His best-known poem is *The Angel in the House*

Patmos. An island of the eastern Mediterranean belonging to Greece. It has associations with St. John the Divine, 4, 158

Patna is on the Ganges and is the capital of Bihar province in the Dominion of India

Patrician. An ancient Roman of noble birth; an aristocrat. All free Romans were divided into two classes, the patricians and the plebeians.

Patriotism means love for one's own country. In its highest form patriotism is always ready to pass from a mere feeling into action. The true patriot, or lover of his country, is prepared to serve it at all times.

Patrol means to walk along a fixed route for the purpose of watching or guarding.
Policemen patrol our streets, day and night, each keeping to his appointed "beat." Railways are patrolled by men who carry out small repairs and report anything that requires attention.

Patronage. The giving of help or encouragement to a person or cause. A large number of charitable societies and institutions enjoy the patronage of the Queen.

Pattern-Making is a term used in foundries. Models of wood are made of many articles that have to be cast in metal, 6, 51
Picture: Models in Wood, 6, 52

Patti, Adelina (1843-1919). An Italian singer who came to London in 1861 and became a naturalised British subject in 1898. Her exquisite voice made her world famous.

Paulhan, L. A French aviator, he flew from London to Manchester with one stop in 1910, 5, 194
Picture: 5, 195

Paul, Tsar. Ruled Russia from 1796 until his assassination in 1801, 2, 410

Pausanias, General (*c* 480 B.C.) He was an officer of the Spartans, nephew of King Leonidas, 2, 33

Pausanias (*c.* A.D. 150). A great traveller, he wrote a gazetteer of Greece in ten volumes, 2, 20

Pavement Cells is the name given to the upper surface of our skin.
Picture: 8, 211

Pavilion. A large tent, or a building erected as a shelter or for entertainments.

Pawnees is the name of a tribe of Red Indians

Pay-Dirt is a term used by primitive miners who wash gold from the gravel of streams

P.A.Y.E. stands for Pay As You Earn in relation to Income Tax (*q v*).

Paysandu. A town of Uruguay on the Uruguay River A noted centre of the meat packing and frozen-meat industry, 4, 393

P.C. means Privy Counsellor, *i e*, a member of the Privy Council. It is also used for Police Constable

Peace River. A river of Canada rising in British Columbia and flowing through northern Alberta Its wheatlands are the most northern in the Dominion, 3, 180, 183

Peach. A tree which bears small flowers of various colours The yellow fruit which they produce have thick velvety skins and are highly esteemed The tree was introduced into Britain in the tenth century

Peacock. One of the most beautiful of birds, with a tail covered with feathered eyes that it can open like a fan It is of Indian origin, 1, 198
Picture: A Beautiful Bird, 1, 199

Peacock-Pheasant. A handsome Indian bird. Its plumage has "eyes" that appear to be of metal.
Picture. 1, 168

Peacock Throne, of solid gold encrusted with precious stones, was a feature of the Palace of Delhi It was carried off by Persian invaders in 1739, 3, 329

Peahen. Name given to the female of the peacock family.

Peak District is a mountainous lime stone region at the southern end of the Pennine chain, famous for the beauty of its dales and the wonders of its caverns The highest point is Kinder Scout (2,088 ft).
Pictures 3, 415 and 416

Peak Downs in Central Queensland, Australia, is where a 300,000 acre farm is growing feeding stuffs for pigs that will provide Britain with pork and bacon, 3, 210
Picture. 3, 207

Pear. One of the most popular British fruits The tree is a native of this country.

Pear Country. Name given to the district of Queensland, Australia, infested with the prickly pear plant, 1, 335

Pearl. A well-known gem which is produced by bivalve creatures such as oysters on the inside of their shells and sometimes in the form of "blisters" between the shell and the fish.
Queensland, Western Australia, Ceylon and other countries have pearl-beds.
—Pearl diving in Panama, 4, 305
Pictorial Map: 3, 242 and 243

Pearl Harbour is a seaport of Oahu, one of the Hawaiian islands, belonging to the U.S.A. It figured largely in the history of the war with Japan which began with the Japanese attack on the naval base on December 7th, 1941, **2**, 252; **5**, 214; **8**, 13

Pearl Mosque. A wonderful building known as Moti Masjid, in the palace at Delhi, **3**, 332

Pearson, Sir Arthur C. (1866-1921) One of the pioneers of popular journalism, he founded *Pearson's Weekly* in 1890 and the *Daily Express* in 1900. Blindness forced him to retire from his newspaper work and in 1915 he transformed his house, St. Dunstan's, Regents Park, into a hospital for soldiers blinded in the war, **9**, 209

Peary, Robert Edwin (1856-1920). An American sailor and Arctic explorer, he made many expeditions to North Polar regions. He was, in 1909, the first man to reach the North Pole, **2**, 358, 412

—he found in Greenland a meteorite weighing 36½ tons, **8**, 162

Pictures. Commander Peary, **2**, 358
The Flags at the Pole, **2**, 361

Peas rank among the leguminous vegetables, legumes being seed pods that open on both sides.

Peasants War, or Rebellion, is the name given to uprisings of the peasantry which occurred in Germany during the early sixteenth century, **4**, 74 and 75

Peat is a form of decayed vegetable matter. In Irish homes it is used as fuel far more than coal, **3**, 142, 154

Peat Soil. In a gardening sense, earth that is highly charged with peat, *i.e.*, decayed vegetable matter, **8**, 272

Peccary. Name of a pig-like, tailless animal, found in many parts of America. It is about 3 ft. in length and has sharp tusks.

Pecten. Name given to a sea mollusc. It is a bi-valve and has about one hundred eyes.

Pedestal. The base or support for a statue or vase, the wide base to a pillar.

Pedestrian. One who goes on foot, a walker; a foot passenger. In towns, and along the edges of many country roads, there are pavements and paths for the use of pedestrians only.

Pedro Miguel. Name of one of the great locks on the Panama Canal.
Picture: **5**, 61

Pedrotallagala (or Pidurutallagalla) is the loftiest peak in Ceylon, 8,296 ft. in height, **3**, 366

Peebles, on the River Tweed, is famous for its twills or tweeds. It is the county town of Peeblesshire, and lies about 27 miles south of Edinburgh, **3**, 112

Peeblesshire is one of the southern counties of Scotland, the Tweed being its main river. It is largely an agricultural area and is chiefly interested in the woollen industry. Also known as Tweeddale.

Peel is a small town and holiday resort in the Isle of Man.

Peel Castle is in the Isle of Man and, if legend is to be believed, is haunted, **3**, 92

Peel, John (1776-1854) A man who worked on the land in Cumberland and was always interested in fox-hunting. Round him was written, by John Woodcock Graves, the song, *D'ye ken John Peel?*

Peel, Sir Robert (1788-1850). An English statesman, he became Prime Minister in 1841. Established the Metropolitan Police Force, the members of which are sometimes called "Peelers" and "Bobbies" after the names of the founder.
Picture: A 19th century "Peeler," **9**, 77

Peepo and the Magic Brush. A Tale for Nursery Folk, **5**, 289

Peers are created by the Sovereign and the titles are hereditary except in the case of bishops and lords of appeal. The peerage consists of dukes, marquesses, earls, viscounts and barons. In certain cases a woman may succeed to the hereditary rank of a peer but no woman may, as yet, sit in the House of Lords.

Peewit. An alternative name for the *lap-wing, q.v.*

Pegasus. In Greek mythology a winged horse. The spring of the Muses on Mount Helicon sprang from a blow of his hoof. He was transformed into a star group or constellation. In astronomy one of the constellations is known by the name of Pegasus.

Pégoud, Adolphe (1887-1915). A great French airman, the inventor of aerobatics. He was the first man to loop the loop and fly upside down. He was killed in aerial combat, **2**, 232, **5**, 194

Pegu is a town of southern Burma. Its Shwehmawdaw, a sacred building, is said to contain two of Buddha's hairs.
Picture: **4**, 222

Peiping (Peking) was the ancient capital of China until 1928 when Nanking took its place. In 1949 the old name Peking was restored and it became the capital once again. It is one of the most remarkable cities in the world, **4**, 243
- visited by Marco Polo, **2**, 269
- visited by Ibn Batuta, **2**, 272
Pictures. Carpet Workers at Peiping, **4**, 230
A Whistle-seller, **4**, 237
The Hall of Prayer, Peiping, **4**, 239
Where Emperors Ruled, **4**, 242
Photo-tone Supplement Bridges Big and Little (Marble Bridge, Lotus Lake), **5**, *between* 64 and 65

Peipus is a large lake between Russia and Estonia. It is some 90 miles long and is connected with the Gulf of Finland by the Narova.

Peiræus. See *Piræus.*

Pekin, or Peking. See Peiping.

Pekingese. A breed of small lap-dog. The animals came originally from the royal palace at Pekin, **8**, 315

Peking Gazette was the name of the first Chinese newspaper. It was published in A.D. 712, **4**, 227

Pelargonium. Genus of flowering, ornamental-foliaged plants, including the half-hardy perennials of the *Geraniaceae* order. One well-known section of the Pelargoniums are often miscalled Geraniums (*q.v.*)

Pelée, Mont. A volcano in the island of Martinique, West Indies. It erupted in 1902 when many thousands of people lost their lives.

Pelican. An African bird, very common on the Upper Nile, but also found in North America, Asia and Australia. Though web-footed, it can perch on trees. (*p.h.*).
Pictures: **1**, 179, 193; **10**, 287

Peloponnesus is the ancient name for that part of Greece now known as the Morea. See *Morea*

Pemba is an island off the coast of East Africa. It forms part of the Zanzibar Protectorate, **3**, 374

Pembroke is the county town of Pembrokeshire. It has an ancient and historic castle and is famous for Pembroke Dock.

—King Henry VII was born here, **2**, 136

Pembroke Peak. This height is on Milford Sound, one of the fjords of the South Island of New Zealand.
Picture **3**, 259

Pembrokeshire, a western county of Wales having agricultural and fishery interests as well as collieries. The River Teifi flows through this county, which includes the fine harbour of Milford Haven. Haverfordwest, Fishguard and Tenby are in the county, **3**, 94
Picture **3**, 100

Pen. Instrument for writing. The earliest implements were the brushes of the Chinese, while the Greeks and Romans used the stylus, then for many centuries the quill pen, cut from goose feathers. Not till about 1820-30 were our modern steel pens brought into regular use though the idea was first tried about 1803. Gold pens were first made in 1836 and the earliest fountain-pen appeared in 1845

P.E.N. stands for Poets, Playwrights, Editors, Essayists and Novelists, and is the name of a literary association founded in 1921 for the promotion of international understanding between writers.

Pen. This name is given to a small enclosure for animals and birds. The female swan is also called a pen. A small dam in a stream is known as a pen. In architecture a pen is a pend or arch.

Pena is the name of a palace that used to be a summer residence of the kings of Portugal. It stands on a hill at Cintra.
Picture: **4**, 137

Penang is an island and port in the Straits of Malacca. It was the first British settlement in the Malay Peninsula and is now part of the Federation of Malaya, **2**, 326, **3**, 404

Penarth, a seaport and holiday resort of Glamorganshire. It stands on the Bristol Channel.

Pendennis Castle is a Cornish beauty spot near Falmouth, **3**, 49

Pendulum. A thing hung in such a way that it can swing freely. The form of pendulum with which we are most familiar is that used for controlling clocks—a heavy weight

or "bob" on the end of a rod. In 1582 the great astronomer Galileo discovered that a pendulum takes a fixed time to make a swing, whether long or short; and that the longer a pendulum is, the more slowly it swings, 7, 350
Picture: Galileo and the Pendulum, 7, 351

Penelope was the wife of Odysseus, of whom we read in Homer, 7, 119
Picture: 7, 124

Penguin. A sea-bird with boat-shaped body, legs placed far back, webbed toes, and wings or flippers which are useless for flying. They are found only in the southern hemisphere. The plumage is white on the front and black at the back. The King Penguin is about twice the size of the ordinary penguin, 1, 194. (*p.h.*)
Pictures: Emperor Penguin, 1, 194
Penguin Swimming under Water, 1, 196
A Peep into a Penguin (X-rays), 6, 230
Pelicans and Penguins, 10, 287
Photo-tone Supplement: Among the Seals and Penguins, 2, *between* 368 and 369

Penicillin is a powerful anti-microbe agent produced from mould, discovered by Sir Alexander Fleming, 1928–30, and made suitable for general use, after much research, during the World War, 7, 398
Picture (Sir A. Fleming): 7, 397

Peninsula is the name given to a strip of land that is almost surrounded by water, *e.g.*, the peninsula formed by Devon and Cornwall,
Special Colour Supplement: Geographical Terms, 9, *between* 176 and 177

Peninsular and Oriental Line was founded about 1835 for voyages between England and the East, 8, 32

Peninsular War. Conflict between Great Britain, Spain and Portugal and France. It was waged in the years 1808–14 and Arthur Wellesley (afterwards the Duke of Wellington) won notable victories, 2, 201 *et seq.*, 410; 4, 137

Penki is an iron centre in the Liaoning province of China which is one of the nine north-eastern provinces (Manchuria), 4, 241

Penley, William (1852–1912). An English actor. He produced the celebrated *Charley's Aunt* in 1892.

Penmaenmawr is a holiday resort on the coast of Carnarvonshire. The mountain rises to a height of 1,550 ft., 3, 108

Penn, William (1644 1718). He became a leader of the Quakers and obtained a grant of land in America as a refuge for members of this sect. The territory was named Pennsylvania, after him.
He crossed the Atlantic several times but died in England and was buried at Jordans (*q.v.*), near Beaconsfield, Bucks, 2, 171, 408
Picture: Treaty with the Indians, 2, 170

Pennines is the name of a range of mountains known as the backbone of England. They run from Northumberland to Derbyshire, 3, 71, 80
Picture: The Lovely Countryside of the Busy North, 3, 81

Pennine Way. An ancient highway for walkers and riders along the whole length of the Pennines.
Picture: 3, 81

Pennsylvania is one of the Atlantic States of the U.S.A. It possesses great mineral wealth and manufactures steel and iron, especially at its city at Pittsburgh. The capital is Harrisburg.
—here oil was first found in 1859, 6, 305
Picture: Founded by William Penn, 2, 170
Pictorial Map: 4, 291

Penny-Come-Quick was the name of the Cornish town of Falmouth prior to 1660, 3, 49

Penny Post for inland letters was established in January 1840 through the efforts of Mr. (afterwards Sir) Rowland Hill. It continued until 1918 when difficulties caused by the First World War led to increases in postal rates, 2, 213, 214
See also *Post Office.*

Pennyroyal. A plant not unlike mint used in the making of medicines, 1, 333

Pennywort, Wall. See *Wall Pennywort.*

Penrhyn. One of the slate-quarrying centres of North Wales.
Picture: 3, 101

Penrith, Cumberland, is a town of the Lake District, centre of a large agricultural area, 3, 90 and 109

Pensioner. One who receives a pension, that is, an allowance made in recognition of past services or for some other reason.

Penstocks. The great pipes used when water is harnessed for power production.

Pentateuch is the name given to the first five books of the Old Testament, called by the Jews "five-fifths of the law." (*p.h.*)

Pentland Firth separates the Orkney Islands from the mainland of Scotland, 3, 140

Pentlands is the name given to the range of hills in the south of Scotland within easy reach of Edinburgh, 3, 115

Penumbra is the name given by astronomers to the fringe surrounding the dark part of sun-spots, 8, 121
—and to the outer part of a shadow, 8, 128

Penumbral Eclipse is the term applied when, during an eclipse, the moon does not enter the deeper part of the earth's shadow, 8, 128

Penzance is a large market town and port on Mount's Bay, Cornwall. It is noted for its mild climate, 3, 42 and 46

Peon is a Latin-American word meaning "peasant farmer."
Picture: 4, 297

Peppermint is a herb which grows from creeping underground stems. Valuable medicines and perfumes are derived from its leaves and stems.
The name of the plant family is Mentha.

Pepper's Ghost was a popular illusion brought about by a reflecting mirror, 5, 102

Pepys, Samuel (1633–1703). The celebrated diarist who was Secretary of the Navy and for a time a Member of Parliament. His diary gives us an intimate view of life in his days, 2, 170; 7, 196, 8, 8. (*p.h.*)
Pictures: Pepys the Diarist, 7, 197
A New Warship, 7, 198
The Fire of London, 7, 199

Pera is a part of the Turkish city of Istanbul, formerly Constantinople, 4, 160

Perak is one of the States of the Federation of Malaya. It is rich in minerals and timber. Taiping is the capital, while Ipoh is the centre of the Kinta mining fields.

Perak. A river of Malaya. Its water is harnessed by the Chenderoh Dam to supply power to the tin mines of the Larut and Kinta valleys, 3, 403

Perak Valley is an important tin-mining region near the Kledang mountains in Malaya, 3, 403

per an. means *per annum, i.e.*, by the year.

per cent. means *per centum, i.e.*, by the hundred.

Perch. A measure of length and an alternative name for the rod or pole: 5½ yards lineally; square measure 30¼ square yards.

Perch. Freshwater fish found in many parts of Europe and in N. Asia. It normally attains a length of 9 to 12 ins. and a weight of 2 to 3 lbs., 8, 246
Special Colour Supplement: British Fresh Water Fishes, 8, *between* 256 and 257

Perch, Climbing. See *Climbing Perch.*

Percival Mew Gull. A high-speed racing aeroplane with a 200 h.p. engine.
Picture: 5, 209

Percussion is the violent striking of one thing on another. A cartridge is exploded by means of a percussion cap, which ignites when struck.
Percussion drills make holes in rock by quickly repeated blows. A drum is called an instrument of percussion because it has to be struck to give out its sound.

Percy. The name of a northern baronial family, earls of Northumberland and prominent in English history, 2, 129

Peregrine Falcon. The bird once used in the sport of falconry. Rare in this country, it is found in many parts of Europe. About 18 in. in length.
Picture: 7, 38

Perennials are plants which come up year after year in contrast to annuals, of one year's duration; and biennials, with a life cycle of two years, 8, 278

Perforation Gauge. A piece of stiff card or other material with rows of dots corresponding to the perforations in postage stamps, 4, 402
Picture: 4, 405

Perfume is the word applied to scent or to anything that smells sweetly. See *Scent.*

Pergolas in the garden are series of arches connected together and used for the training of roses, clematises

PELICANS AND PENGUINS



Australian Geographical Society

Pelicans (see p 285) are found in N America, Asia and Australia, and the largest member of the family is the Australian, seen in this photograph in flight over water Their extended wings measure about 10 ft between the tips and their great beaks, with their curious pouches, are well adapted for the capture of the fish on which they live, making their homes by lakes and rivers



Planet News

In this photograph of various members of the *Penguin* (see p 286) family, the birds are seen far from the Southern Hemisphere to which they belong Their home is the Zoo at Edinburgh, but once, accidentally, a gate was left open and the Penguins flocked forth Thereafter they regularly walked out to the 'bus stop, formed a queue, then contentedly returned under their keeper's watchful eye

and other climbing or rambling plants.

Perigee is the point in the orbit of a planet or the moon at which it is the nearest to the earth. It is the opposite to apogee.
When in perigee the moon is 221,614 miles from the earth; when in apogee, 238,840 miles.

Perianth. A part of a flower. When calyx and corolla cannot be told apart the two sets of flower leaves are called the perianth, as in some varieties of daffodil, 1, 296

Pericles (*c.* 490–429 B.C.). A great statesman and orator of Athens. He created an alliance of Greek cities under the leadership of Athens.

Perim. A British island guarding the southern entrance to the Red Sea. It is part of the colony of Aden, 3, 388

Periwinkle. (1) A form of sea snail, brownish-green or black; often eaten as food, 1, 228
—(2) A shade-loving, creeping plant bearing blue or purple flowers Evergreen, 1, 304, 338

Perkin, Sir William Henry (1838–1907). In an attempt to make artificial quinine from coal-tar products he extracted a mauve dye and so established an important commercial commodity, 6, 19

Perlis is one of the states of the Federation of Malaya. It produces rice, rubber and tin. The capital is Kangar.

Pernambuco is a province of Brazil It produces sugar, coffee and similar crops. The capital is Recife, once known a Pernambuco.

Perpendicular means perfectly upright; continuing a straight line drawn from the centre of the earth. A mason's plumb line is perpendicular when at rest.
– the name is given to a style of architecture which succeeded, and was generally less decorative than, the Early English style, 7, 301
Pictures: Gloucester Cathedral Cloisters, 7, 302
Winchester Cathedral, 7, 303

Perpetual Motion is a problem which many inventors have tried in vain to solve, because the very idea conflicts with natural laws.
Motion implies energy, and if this is not maintained, motion will eventually be arrested by friction.

Perranporth is a popular resort on the north coast of Cornwall, 3, 49

Perran Round, an ancient and curious amphitheatre of north Cornwall where miracle plays were performed, 3, 49

Perry. Name of a drink made from pears, as cider is manufactured from apples.

Perseid Meteors are so-called because they are associated with the Perseus constellation in the heavens.

Persepolis. An ancient city of Persia, it was captured by Alexander the Great in 331 B.C., 2, 44
Picture: 2, 45

Pershore is a town of Worcestershire in the centre of a great fruit-growing district. Pershore plums, yellow in colour, take their name from this place.

Persia. A kingdom of Western Asia, generally known in recent times as Iran. In 1949, however, the Iranian government decided to revert to the old and historic name of Persia to avoid confusion with the neighbouring country of Iraq. See *Iran*

Persian Gulf is a long inlet from the Gulf of Oman on the shores of the Arabian Sea. The north-eastern shore of the Persian Gulf and of the Gulf of Oman is the coast of Iran (Persia); the southern shore is that of Arabia. The coastlands of the Persian Gulf contain important centres of the oil industry, 4, 202 *et seq.*

Persian Wheel is the name given to an Indian native appliance for spinning cotton.
Picture: 3, 325

Persicaria, Spotted. See *Spotted Persicaria.*

Perspective. The art of representing objects in a picture so that they, or their parts, appear to be at different distances from the beholder, and so give the same impression as the objects themselves.
One of the rules of perspective is that the farther away an object is, the smaller it must be drawn in relation to near objects.

Perspex. Trade name of a plastic made of acrylic resin. It is about one and a half times as transparent as ordinary glass and is largely used for windows in aircraft as it can be easily bent to a required shape In the U.S.A. Perspex is known as Plexiglass, 6, 375
Pictures: 6, 374, 375

Perth stands on the River Tay and is the county town of Perthshire. It was once the capital of Scotland Noted for its dyeworks and many industries, including textiles, 3, 114, 124
Picture: 10, 281

Perth, capital of the State of Western Australia, stands on the Swan River. It has a population of over 320,000, 3, 219
Picture: 3, 219
Photo-tone Supplement: Two Australian State Capitals, 3, *between* 240 and 241

Perthshire is a county of Scotland famous for its lochs and mountains. Its chief river is the Tay. Perth, Crieff and Dunblane are among its towns and it includes the Trossachs.

Peru is a Republic of South America, its western side facing the Pacific It is mountainous but has fertile valleys so that it yields agricultural produce. There is an abundance of oil and minerals
The capital is Lima, 4, 324, 331
Pictures: On One of the World's Highest Railways, 4, 331
Sunday Market at Huncayo, 4, 333

Peruvian Lily is the name often given to the perennial plant Alstrœmeria.

Peshawar is capital of the North-West Frontier Province of India and a military and caravan centre, 3, 340

Peshola. See *Pichola* of which it is a variant.

Peshtigo. A district in Wisconsin, one of the States of America. Here a forest fire destroyed 1,200,000 acres, 1, 316

Pest. A thing which annoys or injures. We have animal pests, such as rats and mice; insect pests, such as flies and mosquitoes; and vegetable pests, such as weeds and mildews.

Petals. A part of a flower. In the case of a buttercup, they are the yellow leaves forming the cup, 1, 292
Picture: 1, 294

Peter I (The Great) (1672–1725). Russian Czar, he was the first to form a trained Russian Army. Visited England to learn shipbuilding. Founded St. Petersburg, now known as Leningrad, 4, 105

Peterborough. A cathedral city of Northamptonshire, once called Medehamstead, *i.e.*, a "homestead amidst the meadows," 3, 66
– remains of plesiosaur, 1, 26
Picture: The Cathedral, 7, 307

Peterhead is an important seaport of Aberdeenshire, Scotland It is a great fishing centre.

Peter Pan. Title of the play for children written by Sir J. M Barrie and first produced in 1904 In book form the story was retold in *Peter Pan and Wendy,* published in 1911. Peter is a boy who never grew up. His statue is to be seen in Kensington Gardens, London. (*p.h.*)
Picture: 3, 24

Peter's Keys. Name sometimes given to cowslips, 1, 301

Peter the Great. See *Peter I.*

Peter the Hermit. A travelling preacher who stirred all Europe to fight the Crusades for capturing the Holy Land from the Turks. He lived at the end of the eleventh century, 2, 102, 404
Picture 2, 407

Petition of Right (1628) was forced upon Charles I by the third Parliament of his reign. Based on Magna Carta and other ancient Statutes it was, its authors claimed, a statement of existing rights and not a demand for new ones, 2, 160

Petits Fours is the name given to small fancy cakes

Petra is a town of Transjordan famous for its wonderful ruins. It is now known by the name of Wadi Musa, 2, 385; 4, 190
Pictures. Hewn in the Living Rock, 4, 189
In the Vanished City of Petra, 4, 190

Petrarch, Francesco (1304–74). Celebrated early Italian poet, 7, 126

Petras, on the southern shores of the Gulf of the same name, is an important centre of the Greek currant industry.
Picture: 4, 353

Petrel. Name given to a large family of sea birds, the best-known of which is the Stormy Petrel, also known as Mother Carey's chicken. It is a swallow-like bird, black in colour with a white patch above the tail. It often follows ships, and will alight on them for scraps of food.

Petrie, Professor Sir Flinders (1853–1942). He spent most of his life excavating among the buried cities of Egypt. Professor of Egyptology at University College, London, 7, 282

Petrol is the most volatile part of petroleum. It vaporises readily at ordinary temperatures and when mixed with air is highly explosive.
Petrol, or gasolene, is the chief fuel for motor car engines, 5, 92

See also *This Age of Oil*, **6**, 305 *et seq.*
Colour Plate: How an Electric Petrol Pump Works, **5**, *facing* 181

Petroleum. Rock-oil; an oily liquid found in the upper strata of the earth. It is a compound of hydrogen and carbon, and its origin is probably animal and vegetable matter that decayed slowly under great pressure. Petroleum can be split up into lubricating oils, fuel oils, kerosene, motor spirit, naphtha and many other substances.
See *This Age of Oil*, **6**, 305 *et seq.*

Petrusse. A river which runs through the Duchy of Luxembourg.
Picture: **4**, 171

Pets. The care and training of a dog, or the problem of the right food for the various animals and birds which are suitable for keeping as pets in the home, is dealt with in *Pets for Boys and Girls*, **8**, 309 *et seq.*

Petsamo is a nickel mining region in the extreme north of Finland. This region was recently ceded to Russia, **4**, 50

Pets' Clinics are places where children and others may take their animals and birds for treatment in time of sickness, **8**, 310

Pettah is the name given to the older quarter of Colombo, capital of Ceylon, **3**, 363

Pettie, John (1839–93). Born in Edinburgh, he became a great Scottish painter.
Picture: York and Lancaster, **2**, 136

Petunia. Well-known half-hardy annual with bell-like flowers, **8**, 278

Pevensey. A small coastal village standing on Pevensey Bay, Sussex. The spot where William the Conqueror first landed.

Pewter is an alloy of tin with small amounts of antimony and copper, **6**, 129

Phæton was the son of Apollo whose sun-chariot he tried to drive, **5**, 351
Picture: **5**, 351

Phæton and the Sun-Horses. A Tale from the Greek, **5**, 451

Phalænopsis. A rare orchid bearing purple flowers, **1**, 368

Phalanger. Name of a small family of marsupials found only in Australasia. The Kangaroo (*q.v.*) is a typical member of this family.

Phalanx. A method of fighting with foot soldiers, closely arranged in rows. Invented by Philip of Macedon, it was perfected by Alexander the Great, **2**, 38

Phalarope. Name given to a family of small shore birds related to the snipe. Two species visit British coasts: the Grey Phalarope, sometimes called the "coot-footed sandpiper." On the water the bird swims lightly and looks like a tiny gull. The Red-necked Phalarope is a summer visitor to the Hebrides and the Orkneys and Shetlands. Like the Grey Phalarope it swims buoyantly and in the same restless way as it darts about to catch insects. In summer its colour is a mixture of slate-grey, fox-red and white.

Pharaoh. This is the title of the kings of Ancient Egypt, **4**, 191
See also *Egypt.*

Pharos of Alexandria, a great lighthouse, was one of the Seven Wonders of the Ancient World, **4**, 195; **7**, 292
Picture: **7**, 287

Phase means a particular stage during a state of change or development. The first phase of the life of some insects is the grub or caterpillar stage; the second, the pupal or chrysalis stage; and the third, the insect or winged stage.

Ph.D. means Doctor of Philosophy.

Pheasant. The male is one of the most handsome of our birds; brought to this country in the thirteenth century. Nests on the ground, **1**, 166
Special Colour Supplement: British Wild Birds, **1**, *between* 160 and 161 (Plate 4)

Pheasant, Amherst's. See *Amherst's Pheasant.*

Pheasant, Eared. See *Manchurian Eared-Pheasant.*

Pheidias (500–432 B.C.). Greatest of Greek sculptors, he worked in marble, bronze, ivory and gold, **7**, 286

Pheidippides, messenger of the Greek military commander Miltiades. He ran to Sparta to obtain help for the Athenians in the Battle of Marathon,
Pictures: **2**, 22

Phelips, Edward. An astute lawyer who was the prosecutor of Guy Fawkes in 1606. His home, lovely Montacute House near Yeovil, Somerset, is a National Trust property, **3**, 412

Phenol, which is a product of coal tar, is used in the making of modern plastics, **6**, 369

Phenomenon. Something that appears or is seen. We use the word specially of happenings and sights which are extraordinary, strange or difficult to understand.
Among natural phenomena are eclipses, the Aurora Borealis, meteors, waterspouts and haloes.

Phial. A small bottle for holding medicines or drugs.

Philadelphia is the largest city in the state of Pennsylvania, U.S.A. It has nearly two million inhabitants. It was founded by William Penn and is an important manufacturing centre, **2**, 170, 191
Pictures: Independence Hall, Philadelphia, **4**, 263
View from the Art Museum, **4**, 280

Philadelphus. A garden shrub popularly known as Mock Orange. It is also called syringa.
—how its bud is bark-clad, **1**, 282

Philately is the science and hobby of collecting stamps. See *Stamp Collecting.*

Philip Augustus (1165–1223) ruled France as King Philip II. He went on a crusade in 1191, **2**, 102

Philip II (1527–98). King of Spain. He threatened to hang Drake as a pirate, **2**, 144, 145, 147
—annexes Portugal (1580), **2**, 406
—persecution of the Low Countries, **4**, 20
—he built the Escorial, **4**, 130

Philip, King of Macedon (359–336 B.C.). He invented the method of fighting known as the phalanx. Father of Alexander the Great, **2**, 38
Picture: **2**, 38

Philippa of Hainault. The Queen of Edward III. She interceded with her husband for the lives of the burghers of Calais (1347).

Philippeville. A port of Algeria, North Africa. Near it is the ruined city of Timgad which is sometimes called the "African Pompeii," **4**, 166

Philippines, Republic of. An independent state of Asia, it was once Spanish territory and then American. The United States gave the Philippines full independence in 1946. The republic consists of some seven thousand islands, the largest being Luzon and Mindanao. The capital, Manila, is on Luzon. The population numbers over 19 millions. Agricultural products include abaca, or Manila hemp, bananas, and coconuts. Rubber is also produced. There are rich forests and considerable mineral resources including gold, copper, and iron. The Philippines were occupied by Japan during the Second World War, **4**, 212, 214, 374
—taken by the Japanese, **2**, 252
—visited by Magellan, **2**, 284
Pictures: In the Philippines Republic, **4**, 209
A Church in Manila, **4**, 211
The Statue of Legaspi, **4**, 211
Terraced Hillsides in the Philippines, **4**, 214

Philistines was the name given to a race of people who lived along the coastal region of the Holy Land. They were often engaged in strife with the Hebrews. Gaza was one of their cities, **2**, 401
Picture: **4**, 188

Phillip Island is off the mainland of the state of Victoria, Australia and is a noted animal sanctuary, **3**, 234

Phillip, Vice-Admiral Arthur (1738–1814) was an officer of the Royal Navy who, as Captain Phillip, in 1788 began a small settlement at Port Jackson. Later, he became the Governor of New South Wales, as the then colony was called, this being the beginning of the great Commonwealth of Australia, **3**, 202 *et seq.*
Colour Plate: The Founder of Australia, **3**, *facing* 206

Phillpotts, Eden (born 1862). British novelist. His stories deal largely with life in Devon. Among his best-known books are *The Children of the Mist*, *The Human Boy* series, *The Fall of the House of Heron*, while his plays *The Farmer's Wife* and *Yellow Sands* have had very successful runs and revivals.

Philomela. In Greek mythology she was the daughter of Pandion, King of Athens. Philomela was transformed into a nightingale, and her name, Philomel, in English is often used in poetry for the nightingale.

Philosopher's Stone. The imaginary substance sought for by the alchemists, who believed that it could be used to change base metals into gold, **6**, 86

Philosophy. The branch of knowledge which is concerned with the final causes and real nature of things.
Philosophy itself has several branches. A philosopher may devote his attention to the philosophy of reasoning, the philosophy of Nature's workings and so on.

Phiz. Pen-name of the illustrator of *Pickwick* and many other books. See *Browne, H. K.*

Phloem is the name given to the tissue forming the inner bark of a tree or plant.

Phobos is the name of one of two small satellites of the planet Mars. It is called after one of the mythological horses that drew the chariot of Mars, **8**, 145

Phœbe is the outermost of the satellites of the planet Saturn, **8**, 155

Phœnicia was an ancient land at the eastern end of the Mediterranean. Tyre was one of its cities, **3**, 50 ; **4**, 340
Picture: **4**, 338

Phœnicians were a nation of famous sailors and traders who lived in a small territory to the north of Palestine. They flourished about 1200 B.C. to 332 B.C. when they were conquered by Alexander the Great. Their chief city was Tyre, but they sailed and traded far and wide, and are said to have voyaged to Cornwall to obtain tin. The Phœnician alphabet passed on to the Greeks and is the basis of our present alphabet, **3**, 50 ; **4**, 132, 166 ; **9**, 17
Picture: Trading with Phœnician Sailors, **9**, 14

Phœnix is the capital of the State of Arizona, U.S.A.

Phœnix was the name of a legendary Egyptian bird which burnt itself to death in the flames of a fire of wood after living for 500 years. A new Phœnix then arose from the ashes.

Pholas. Name of a bivalve sea mollusc having a white shell. Some varieties are found in British waters and used as bait by fishermen, **9**, 368

Phonograph. The first practical "talking-machine," it was patented by Thomas A. Edison in 1877, **6**, 167; **9**, 391
Pictures: **6**, 167 ; **9**, 389

Phosphorescence is the capacity for emitting light possessed by certain insects (such as glow-worms and fireflies), fish, tiny animalcules in the sea, decaying animal and vegetable matter, and luminous paints. The nature of the phenomenon is not yet fully understood, **9**, 368

Phosphorus. A light yellow, non-metallic element (symbol P) which glows in the dark. If lighted it burns with a dazzling white flame ; and it takes fire so easily that it must be stored in water.
It is obtained from phosphates, which are chemical combinations of it with other elements ; and is used chiefly in the manufacture of matches.

Phosphorus was the name given by the ancient Greeks to the planet Venus when it appeared as a morning star. When it appeared in the evening it was named "Hesperus," **8**, 141

Photo-Electric is a term used with reference to light and electricity. The adjective is employed chiefly of a "cell" for controlling or setting up small electric currents.
The general principle of such a cell is that, when exposed to light, it allows current to pass ; and the stronger the illumination is, the larger is the current. It responds to changes of light taking place hundreds of times a second.
—It is used in Picture-Telegraphy, **6**, 182

Photography, the employment of light to record permanent images on sensitised surfaces, had its beginning as a practical art in 1839, when Daguerre succeeded in fixing images on metal plates. Before this J. N. Niepce had achieved crude results and later became Daguerre's partner. The wet-plate process discovered by Scott-Archer in 1851 held its own till the invention of the "dry" plate twenty years later. Celluloid films first came into use about 1889 and photographs in natural colours in 1890, **9**, 377
—See also *Making the Most of Your Camera*, **8**, 259 *et seq.*
Pictures: Negative and Positive, **5**, 96, 97

Photogravure. A photo-mechanical process of making printing plates which, on good quality paper, produces results almost equal to the original. The Photo-tone Supplements in these volumes are examples, **9**, 392

Photosphere is the name given to the envelope of high-heated gas surrounding the sun, **8**, 120
Pictures: **8**, 120, 121

Phrenology is not accepted as a science though it may be a useful guide up to a point. It is based on the theory that the mental capacity and the main characteristics of each individual can be gauged from the measurements of the skull. The theory was first propounded by F. J. Gall, a physician of Vienna, in 1810-12.

Physicist is the term applied to one who studies the laws and properties of matter.

Physick Garden. Name given to the plots in old-world gardens where herbs and plants were grown for the making of medicines, **1**, 333

Physics is that branch of science concerned with the fundamental laws of the universe and deals with the properties of matter and the various forms of energy. See *Heat, Light and Sound*, **5**, 85 *et seq.*; *Questions and Answers* on Physics, **9**, 377 *et seq.*

Physiology is the science of how we live and exercise the functions of the human body. It also extends to the life of animals and plants. See *How the Body Works*, **8**, 209 *et seq.*, **9**, 330 See also *How the Brain and the Mind Work* in which the physiology of the brain is dealt with, **6**, 399

Physiotherapy is a branch of medical science for the treatment of muscular complaints such as rheumatism by skilled massage, electrical treatment, including radiant heat and rays.
Picture: Artificial Sunlight Aids the Doctor, **7**, 387

Pianoforte. The well-known piano is a keyboard stringed instrument in which "hammers" are used to strike the strings. The hammer mechanism was invented by an Italian named Cristofori in 1709. His pianoforte was a very important modification of a number of stringed keyboard instruments which had long been in use, of which the chief were the spinet, clavichord and harpsichord. In the two centuries and more which have elapsed since 1709, many important modifications and improvements have been made, resulting in the pianoforte and grand pianoforte of today.

Piave is a river of Northern Italy which flows into the Adriatic Sea. It was the scene of heavy fighting in the war of 1914–18, **2**, 239

Piazza San Marco (St. Mark's Square) is a famous open space in the heart of Venice. It leads out, through the little square on which stands the Doges Palace, to the Grand Canal.
Photo-tone Supplement: Seaports Old and New, **4**, *between* 112 and 113

Piccadilly Circus is a famous meeting place of several roads at the eastern end of Piccadilly, in London. Its centre is formed by a fountain, erected as a memorial to the seventh Earl of Shaftesbury, which is surmounted by the statue of Eros.
Picture: **3**, 12
Piccadilly is also the name of a busy centre in the city of Manchester.
Picture: **3**, 85
Piccadilly is also the name of a pleasant country place in the Lofty Mountain Ranges of South Australia, **3**, 220

Piccard, Auguste (b. 1884). A Swiss scientist he carried out famous stratosphere ascents in a specially-constructed balloon, and has also been engaged in submarine research, **5**, 189 ; **7**, 415
Picture. **5**, 190

Piccini (1828-1900) An Italian musical composer who specialised in opera **7**, 173

Piccolo. This instrument is a small flute, sounding an octave higher than the orchestral flute. See also *Flute* and *Musical Instruments.*

Pichola is the name of a lake in Udaipur, one of the States in the United State of Rajasthan which is a part of the Union of India. It is famous for its royal palace, **3**, 342
Picture: **3**, 341

Pick-a-Back Plane. A composite aircraft having a small aeroplane mounted on top of a larger one.
Picture. **5**, 214

Pickering is an agricultural town of the North Riding of Yorkshire. It is 32 miles from York. The vale of Pickering lies between the moor of N. Yorkshire and the Wolds.

Pickwick Papers formed the earliest of the novels of Charles Dickens. The central figure is Mr. Pickwick, **7**, 214
Picture: Mr. Pickwick, **7**, 213

Pico Del Pozos, over 6,000 ft. in height, is a mountain of Grand Canary, Canary Islands.

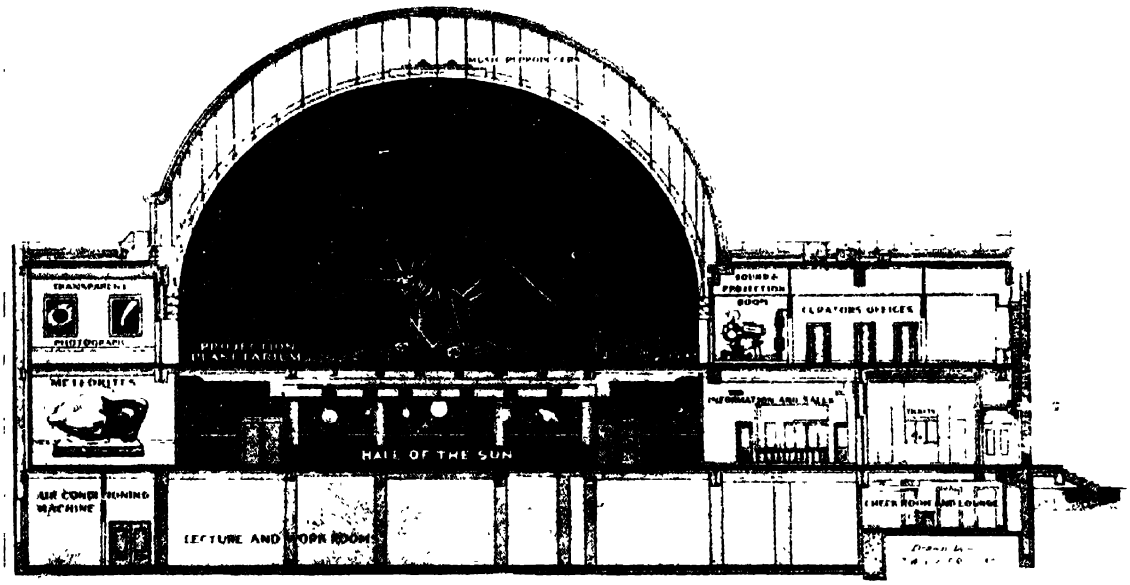
Picotees belong to the carnation family. The flowers have coloured edges.

Pictor is the name of a constellation or group of the stars, **8**, 176

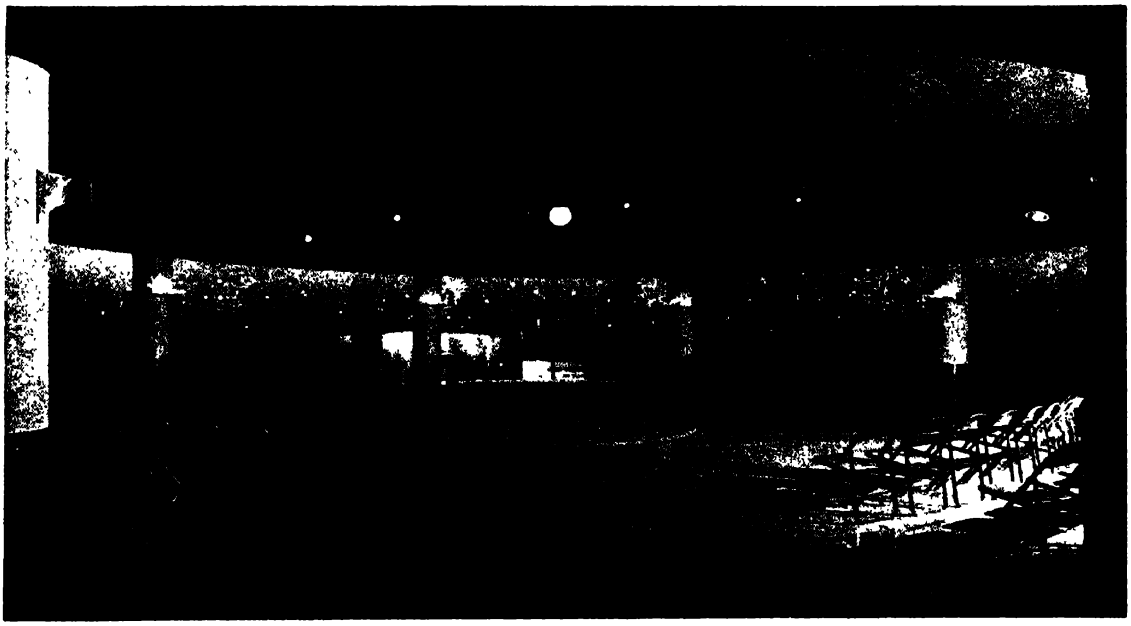
Pictorial. Having the nature of a picture ; illustrated by pictures. The title chosen for this work implies that knowledge is imparted in it with the help of many pictures and other illustrations.

Pictorial Stamps. Postage stamps which contain famous views or show historical incidents.
Pictures: **4**, 409 and 412

INSIDE THE PLANETARIUM



A *Planetarium* (see p. 294) is to be erected in London for students and all interested in Astronomy. It will be similar in design to the Hayden Planetarium in New York, the general plan of which is seen above. The main part of the building is a huge dome with an internal diameter of 75 feet. The instrument in the centre of the floor projects the sun, moon, stars and other bodies on to the dome.



Photos, Hayden Planetarium, New York.

Below the main dome room is the Hall of the Sun containing an animated model of the solar system, 40 feet across. A large luminous globe representing the sun is suspended from the centre, while at increasing distances from it are the small globes of the planets, which not only revolve about the sun but rotate on their axes, moving always at the correct relative speed.

Picts. Name given to a race of people who once inhabited parts of Scotland and often raided England, **2**, 82
Picture: The Picts Harry the Land, **2**, 82

Piddick. Another name for the mollusc Pholas (*q.v.*).

Pidgin English is a mixture of English and Chinese used by foreigners in China for commercial purposes. "Pidgin" is a corruption of "business."

Pidurutallagalla. See *Pedrotallagalla.*

Piebald. Term applied to a horse whose coat is white mixed with black.

Pied Flycatcher. One of the summer visitors, this bird winters in Africa.

Piedmont. This is the name given to a large region of northwest Italy. Before Italy was united, it formed a major part of the kingdom of Victor Emmanuel II, **4**, 150

Piedmont Glacier. Name given to a glacier which proceeds down a valley and then opens out on to a flat plain.
Picture: **1**, 39

Pied Piper of Hamelin, The. A legend, dating from 1284, of a piper who freed Hamelin of a plague of rats, but drew away all the children of the town.
Picture: **7**, 150

Pied Wagtail. See *Wagtail.*

Pierre is capital of the American State of South Dakota. It stands on the River Missouri.

Pietermaritzburg. The provincial capital of Natal in the Union of South Africa. Its population numbers more than 27,000.

Pig. Name given to the family of hoofed mammals known as Suidæ. Pigs bred in this country probably came from wildings that once roamed the forests. The chief breeds are Berkshire, Gloucester Old Spot, Lincolnshire Curly Coat, Tamworth, Large Whites and Middle Whites, **6**, 381
Picture: Feeding Time with Pigs, **6**, 382

Pigeon. Name of a large family of birds of the order Columbiformes. There are many species, all easily identified : fairly large head, compact body, and blue-grey plumage. The domestication of the pigeon and its use as a message-bearer goes back many centuries. Pigeons were used as long ago as 43 B.C. to carry the names of Olympic winners to Athens and Rome.
Pigeon-flying as a sport became popular about 1820 in Belgium, but not until around 1874 was it taken up in Britain. Some birds can fly at nearly 2,000 yards a minute, and one bird is recorded as having flown over 1,000 miles. In Britain the sport is controlled by the National Homing Union, founded in 1896.
—pigeons as pets ; how to house and feed them, **8**, 321

Pigeon, Toothed-Bill. See *Toothed-Bill Pigeon.*

Pigeon, Wood. See *Wood Pigeon.*

Pigeon, Painted. See *Painted Pigeon.*

Pig-Iron is made by running molten iron from a furnace into what are termed pig-moulds, **6**, 48. See *All About Iron*, **6**, 41 *et seq.*

Pigment is a material for colouring; a paint; a dye. The pigments employed by a house-painter are powders of different colours, which he mixes with linseed oil, turpentine and other materials.
The artist uses pigments mixed with oil and gum.

Pigmy. One of a race of human dwarfs. Most of the pigmy races known today live in Central Africa. The average height of some is under 4½ ft., and much shorter pigmies are believed to inhabit the forests of the Amazon in South America.

Pig-Tailed Baboon. A short-tailed baboon, often called Chacma.

Pika. Name given to the tailless hares which have a resemblance to guinea-pigs. They are rodents and live in the higher parts of Asia.

Pike. Name of a family of fresh-water fish found in Europe, Asia and America In British waters the fish is long and narrow.
See *The Angler's Art*, **8**, 245
Special Colour Supplement: British Fresh Water Fishes, **8**, *between* 256 and 257 (Plate 1).

Pilatus is a peak of the Alps in Switzerland, in the vicinity of Lake Lucerne. It rises to a height of nearly 7,000 ft., **4**, 59; 62
Photo-tone Supplement: The Continent of Europe, **4**, *between* 112 and 113

Pilchard. A valuable food fish found off the western shores of England. It belongs to the herring family, **8**, 78

Pilcher, Percy Sinclair (1866–99). An English pioneer of aviation. He carried out glider experiments and made his first successful flight in 1895, **5**, 184

Pile. A sharply pointed beam or tube driven down into the ground to act as a support. A pile may be of wood, metal or concrete.
Soft ground on which a heavy building is to be erected is made safe by driving large numbers of piles down into the firm ground beneath it. The top ends of the piles then carry most of the weight falling on the foundations.

Pilgrim Fathers. A band of English settlers who journeyed to America in 1620. They sailed from Plymouth, in the *Mayflower* on September 6th and landed on Plymouth Rock on December 16th, 1620, **2**, 155, 158, 190, 407; **4**, 261
Pictures: The Pilgrim Fathers reached new lands, **2**, 155
The Landing of the Pilgrim Fathers, **2**, 411
Photo-tone Supplement: Famed in America's Story, **4**, *between* 272 and 273
Colour Plate: Departure of the Pilgrim Fathers, **2**, *facing* 156

Pilgrim's Progress, The. Is the most famous work written by John Bunyan (1628–88) and is one of the most popular books ever to have been published in England. It was begun while Bunyan was in prison, **2**, 168 ; **7**, 195

Pilgrims' Way is the name of an historic track which pilgrims of medieval times travelled along when going through Winchester to Canterbury to visit Becket's shrine. Chaucer's Pilgrim's Way followed much the same route as the more modern road and some 120 miles of the old Pilgrims' Way can still be traced.

Pilgrim Trust. The sum of £2,000,000 was placed in the hands of British trustees by the American railway magnate, Edward Stephen Harkness, in 1930. The income from this sum is used for the restoration of ancient buildings or for research work, **3**, 413

Pillar of St. Anne stands in the Maria-Theresienstrasse in the Austrian town of Innsbruck. It commemorates the defeat of the French and Bavarians in 1703.
Picture: **4**, 88

Pillars of Hercules was the name given by the ancients to the Rock of Gibraltar on the north and Ceuta on the south of the Straits of Gibraltar.
They were thought to have been torn apart by Hercules to connect the Mediterranean Sea with the Atlantic Ocean.

Pillory. An old-time instrument of punishment, which held a person by the neck and wrists in a standing position.
A person thus held was exposed to the insults, and even the violence, of the mob, **9**, 324
Picture: **7**, 201

Pilot Whale. A sea animal averaging about 20 ft. in length. This is the whale most likely to be seen round British coasts.

Piloty, Karl von (1826–86). German painter of historical subjects.
Pictures: The Murder of Cæsar, **2**, 78

Pilsen is one of the largest towns in the central European republic of Czechoslovakia. It is noted for its breweries and the Skoda steel works and is known to Czechs as Plzen, **4**, 92

Pilsudski, Joseph (1867–1935). Polish soldier and statesman. When Poland became independent after the First World War he was elected Chief of State. He retired in 1923 but in 1926 regained power and was dictator until his death in 1935, **4**, 123

Pimento is the name of a bush or tree growing in tropical countries, from which spice, medicines and perfume are obtained, **3**, 397

Pimpernel, Scarlet. See *Scarlet Pimpernel.*

Pimpernel, Yellow. See *Yellow Pimpernel.*

Pincushion Flower is a name often given to the familiar field scabious.

Pine. A well-known tree of the cone-bearing family (conifers). Some of the varieties are Scots, Austrian, Cluster and Weymouth, **1**, 414
Picture: **1**, 413
See also *Scots Pine.*

Pineapple. Fruit of a tropical plant found in America, certain islands of the Pacific, the West Indies and the Azores. Clusters of long, rigid sword-shaped leaves surround a short stem on which flowers grow. The berries which follow the flowers eventually grow together into a compound fruit.
Picture: Oahu, Hawaii Islands, **4**, 289

Pine, Lodge-Pole. See *Lodge-Pole Pine.*

Pine-Marten. A small weasel-like animal now sadly rare in this country.
Picture: **1**, 133

Pinion. The outer joint of a bird's wing; a large wing-feather. The verb to pinion means to bind the arms, or to cut off this part of one wing to prevent flight.

Pinnacle means a rocky peak; a sharp, or pointed summit. In architecture any lesser structure, whatever be its form, that rises above the roof of a building as an addition or ornament, capping perhaps the higher-parts, is known as a pinnacle.

Pinnule is the name given to a leaflet or part of a primate leaf; and to one of the barbs of a feather.

Pinocchio. Title of one of Walt Disney's most popular films and the name of the chief character, a toy made by the wood-carver, Geppetto, which eventually becomes a real boy, **9**, 291
Pictures: **9**, 286, 287

Pinta was the name of one of the three ships used by Christopher Columbus in the discovery of America, **2**, 276

Pintail. One of the wild ducks which migrates to the shores of Great Britain during the winter. It has an unusually long tail.

Pinturicchio, Bernardino (1454–1513). An Italian artist, he painted many frescoes as well as notable pictures.
Picture: **7**, 124

Pinx. means pinxit, *i.e.*, he (or she) painted [illegible] (picture).

Pinzon was captain of one of Columbus's ships on the first voyage across the Atlantic He deserted at Cuba, **2**, 278

Pioneer. One who goes first or acts first in a new venture; one who goes ahead to prepare the way for others. The explorers are pioneers.
Those soldiers who march in front of an army to repair the roads or clear them are called pioneers.

Pipe-Fish. Marine creatures having long bodies and a tube-shaped snout. Some species carry their eggs in a kangaroo-like pouch.

Pipe-Line is a term usually applied to a system of pipes for conveying oil from the wells to the nearest seaport, **6**, 314
Pictures: Constructing a Pipe-Line, **6**, 316

Pipes, Tobacco, now used in this country are made chiefly from the roots of a species of heath, the French word for which—bruyère—has been corrupted into our "briar."

Piping Hare. The name of a tailless hare found in parts of Asia so-called because of the noise it makes whilst feeding.

Pipistrelle, the name of one variety of the common bat, **1**, 140

Pipit. Small bird, about the size of a sparrow, usually found in very open country with rough herbage and amidst forest clearings. The meadow pipit is the most common of British pipit. The tree pipit is a summer visitor to this country. On the rocky portions of Britain's coast-line the Rock Pipit is also found, both as a summer visitor and as a permanent resident.

Piræus is the principal seaport of Greece five miles from the city of Athens, formerly spelt Peiræus, **2**, 34; **4**, 157

Piranhas are saw-toothed fish of the River Amazon, **4**, 314

Pirates. Adventurers who, in the days before steam and wireless, attacked merchant ships to rob them and in some cases to capture the ship itself. Pirates existed from the very earliest days of trading ships and although the advent of steam put an end to piracy in most parts of the world it continued to exist in such places as the China seas until recent years.
Among famous pirates who have figured in British history were Captain John Avery ("Long Ben"), Captain Edward Teach, Captain William Kidd, and Bennet Graham, **8**, 52

Pisa is a town of Tuscany, in Italy. It has many industries, but a focus of interest is always its Campanile, the famous Leaning Tower of Pisa, more than 16 ft. out of the perpendicular, **4**, 151
Picture: **4**, 146

Pisces, the Fishes. One of the Signs of the Zodiac.

Pishauko is the name of a tribe of primitive Indians who live in Venezuela.
Picture: **4**, 329

Pistil. A part to be found in the centre of flowers. It is made up of carpels and may be called the seed-box, **1**, 297

Piston. A circular plate or plunger, moving in a cylinder or tube, which it fits closely. A piston of a steam engine or gas engine is pushed to and fro to impart power through rods to a crank and shaft, while that of a pump exerts pressure on a liquid.

Pitcairn Island. An island of the east Pacific and a British colony. The colony owes its existence to the mutiny on H.M.S. *Bounty* in 1789, **3**, 391

Pitch means the distance between, viz., the centres of the threads of a screw; the teeth of a cogwheel; the links of a chain; the teeth of a saw, etc.
A screw of ¼-in. pitch has eight threads to every inch of its length, and if screwed into anything will advance ¼ in during each complete revolution. The pitch of a bicycle chain is usually ½ in.

Pitchblende, a grey to black ore of uranium occurring in veins and found in different parts of the world.
From the reddish powder left after the uranium has been extracted, the radio-active elements actinium, polonium and radium are obtained, **7**, 386

Pitcher Plants. Name given to plants that have cups or pitchers for trapping insects. See *Nepenthes.*

Pitch Lake is the name given to a natural lake of pitch or asphalt found in Trinidad. It covers an area of 104 acres and is considered one of the natural wonders of the world, **3**, 396; **4**, 389

Pith is a soft substance found in the middle of the root, stem and branches of many plants, including trees, which grow by adding new rings.

Pitlochry is a holiday and tourist town of Perthshire, Scotland, near the famous Pass of Killiecrankie.

Pitman, Sir Isaac (1813–97). A schoolmaster who invented the Phonographic system of shorthand now known by his name. He taught Taylor's shorthand but eventually devised his own system and published his first treatise in 1837, later founding a publishing business. He was knighted in 1894 and his system is the most generally used in the British Empire. See also *Shorthand.*

Pitt, William (1759–1806). Became Chancellor of the Exchequer at the age of twenty-three and later Prime Minister. He effected the Union between Great Britain and Ireland. Younger son of the elder Pitt, Earl of Chatham (*q.v.*), **2**, 196, 200, 410; **9**, 328

Pitt, William, the Elder. See *Chatham, William Pitt, Earl of.*

Pittsburgh is the second largest city in Pennsylvania, U.S.A., and is noted for its vast iron and steel industry, **4**, 270
Pictures: Where Steel is Made, **4**, 279

Pituitary is the name of a gland which controls the growth of our bones, **8**, 231

Pixie. An elf or fairy The dark-green rings sometimes seen in meadows are called pixie-rings, as they were once believed to be made by pixies; and in some places toadstools are known as pixie-stools.

Pizarro, Francisco (*c* 1475–1541). A Spanish adventurer, he discovered and conquered Peru with a force of less than 200 men, **4**, 324, **6**, 101; **9**, 32

Piz Roseg is one of the massive peaks in the Bernina Alps, Switzerland. It is nearly 13,000 ft. high.
Colour Plate. Cattle Grazing Beneath the Snow-clad Peaks of the Bernina Alps, **4**, *facing* 53

P.L.A. means Port of London Authority (*q.v.*).

Place de la Concorde is a famous square of Paris, **4**, 12

Place de l'Opera. A famous square in Paris, the capital of France, overlooked by the Opera House.
Picture: **4**, 5

Place du Parvis Notre Dame is a square on the Ile de la Cité in Paris where there was bitter fighting during the Second World War.
Picture: **4**, 6

Plack. A small copper coin circulated in Scotland in the long ago.
Pictures: **8**, 304, 306

Plague. A severe infectious epidemic which in the Middle Ages visited Europe. One such plague, known as the Black Death, swept through England in 1348 and nearly half the population of this country died from it, **2**, 125
—the Great Plague of 1665 chiefly affected London and caused thousands to flee from the city. The main causes were dirt, bad drainage and the unhealthy air of the city, **2**, 169, 408
Picture: Rescued from the Plague, **2**, 168

Plaice. One of the so called flatfish, **1**, 220
Special Colour Supplement: British Fishes, **8**, *between* 256 and 257 (Plate 4)

Plain Needlework implies the learning of several types of stitch. Each of these stitches is explained and illustrated, **8**, 405

Pictures Tacking, Hemming, Whipping, etc., **8**, 408
Gathers, Run-and-Fell Seam, French Seam, **8**, 409
Buttons and Buttonholes, **8**, 411
Darning, **8**, 411, 412

Plain of Somerset lies between the Mendip and Blackdown Hills in the county of Somerset. It is a pasture-land region with Taunton as its chief town, **3**, 56

Plains of Abraham. At the top of the Heights of Abraham, Quebec, Canada. Upon the Plains was fought the battle which General Wolfe's troops won. Both Wolfe and Montcalm (the French general opposing him) were killed in the battle, **3**, 157
Picture: **3**, 161

Plaited Raffia. See *Raffia, Plaited*

Plane. A tree much seen in London, where its habit of shedding the bark makes it impervious to the effects of smoke and fog, **1**, 411
Pictures. A Plane Twig, **1**, 282
A Plane Tree, **1**, 408

Plane Crazy was the title of the first *Mickey Mouse* film produced by Walt Disney. It was a silent film, **9**, 283

Planetarium. A mechanical arrangement or apparatus designed to show the movements of the planets and other bodies of the solar system.
Pictures: Inside the Planetarium, **10**, 291

Planets were known to the Greeks as "wanderers." They are nine bodies (including the earth) which revolve in regular orbits round the sun. The earth is one of the smallest of the nine. Jupiter (the "Giant planet") is the largest, being 1,300 times the size of the earth and 300 times its weight. The names of the planets arranged in the order of their distance from the sun are: Mercury (36 million miles), Venus, Earth (93 million miles), Mars, Jupiter, Saturn, Uranus, Neptune, Pluto (3,670 million miles). The four planets Mercury, Venus, Earth and Mars have been sometimes called the "inferior" planets, and the rest the "superior" planets. Another classification divides the planets into "interior" and "exterior." The interior planets are Mercury and Venus, which move round the sun within the orbit of the earth. The rest of the planets are "exterior," as their orbits are farther from the sun than the earth's orbit. In addition to the planets proper there have been discovered much smaller bodies revolving round the sun which are called *asteroids* or *planetoids*. So far over 1,000 asteroids have been recorded. Only one, Vesta, can be seen with the naked eye, and it is never conspicuous. Further particulars about each of the nine planets proper are given in the Index under the name of each planet.
See *The Wonders of the Heavens*, **8**, 107 *et seq.*

Plankton is a word describing the vegetable and animal matter floating in the sea that forms food for many fish, **8**, 72

Plantagenet Kings of England were Henry II, Richard I, John, Henry III, Edward I, Edward II, Edward III, Richard II, Henry IV, Henry V, Henry VI, Edward IV, Edward V and Richard III. The period began in 1154 and ended 1485.

Plantain. (1) A coarse variety of banana, **1**, 312
(2) A weed common in gardens and on lawns. It produces broad, flat leaves and spikes of green flowers, **1**, 338
Picture: (2), **1**, 339

Plantain-Eater. Name given to a bird found in parts of Africa. It is like the cuckoo in many ways but makes its own nest.

Plant-Cutters are birds having the edges of their beaks serrated like a saw. They make their home in the temperate parts of South America and feed upon fruits and herbage which they cut away with their bills.

Plant-Lice. Another name for *Aphides* (*q.v.*).

Plant Life, The Wonders of. In forest, field and garden, **1**, 275

Plants as Food. About wheat, Indian corn, rice and other invaluable crops, **1**, 307. See also *Cereals.*

Plants, Flesh-Eating. See *Flesh Eating Plants*

Plants, Healing. Various forms of plant-life from which medicines are obtained, **1**, 332

Plants, How they Live and Breathe. Information for the beginner in botany, **1**, 275. See also *Botany.*

Plants, How they Protect Themselves. Various means of defence and how they are used, **1**, 351

Plants, In the Garden. See *Gardening for Girls and Boys*, **8**, 271

Plants Made by Man. Stories of the men and women who produce new plants, **1**, 377

Plants, Questions and Answers, 9, 370
See also *Botany.*

Plassey. A place in Bengal, India. Here, in the battle of this name, Clive defeated the Nabob (1757), **2**, 185, 409

Plaster-of-Paris is finely powdered gypsum (sulphate of calcium). Before being ground up, the gypsum is heated in a kiln to drive most of the water out of it.
When the plaster is wetted it combines again with water and in doing so hardens quickly. It is used for a variety of purposes, including the making of moulds and casts, and cementing things together, **9**, 414

Plastics is the word used to cover a wide range of manufactures made from certain materials which pass through a plastic stage while being made and can be moulded into any shape by heat and pressure. These methods are described in *The Wonders of Plastics*, **6**, 367 *et seq.*
Pictures: Moulded in Plastic Material, **6**, 367
Plastic Toys, **6**, 368
A Hot Plate Press, **6**, 369
Prepared for a Rainy Day, **6**, 370
In Wide Variety, **6**, 371
Aeroplanes, Ships and Cars, **6**, 372
As Clear as Glass but Stronger, **6**, 373
Corrugated Perspex, **6**, 374
Unbreakable Top Lights, **6**, 375
Fittings for Motor Cars, **6**, 376

Platæa. A city of Ancient Greece which sent a body of armed men to help the Athenians at the battle of Marathon, **2**, 22
—Battle of (479 B.C.). Fought by the Greek city states against the armies of Xerxes which were overcome and defeated, **4**, 160

Plateau. A high plain or tableland. Tibet is the highest plateau in the world, lying from 11,000 to 16,000 ft. above sea level.
A submarine plateau, about 400 miles wide, at the bottom of the Atlantic Ocean, extends from Ireland to America.

Plated Goods consist of table ware, vases, etc., where a baser metal is hidden by a coating of pure silver, **6**, 106

Plated Lizard. Name given to the *Stegosaurus* (*q.v.*).

Platelayers are men who keep our railway tracks in repair. Originally flat plates were laid upon which the wheels ran, hence the name, **5**, 124

Plate River. See *Rio de la Plata*

Platinum, a white metal, one of the elements (symbol Pt) and more expensive than gold. It comes chiefly from the Ural Mountains district of the Soviet Union, and from South Africa and Ontario, Canada
Its capacity for withstanding intense heat renders it indispensable for laboratory crucibles and in certain parts of electrical apparatus; while its value and beauty have made it fashionable for high-class jewellery

Plato (*c.* 428–348 B.C.) Born at Athens, he was a famous Greek philosopher. In his books he set out the teachings of his friend Socrates (*q.v.*). His best-known work is his *Republic* which gives a description of an ideal State, **2**, 37; **7**, 346
—name given to one of the craters on the moon, sixty miles across.

Platypus. Animal native to Australia. It is about 18 in. in length with a flat body and duck-like head. The tail is short and the feet webbed for it lives largely in the water
It lays eggs and yet nurses its young, **3**, 246
Photo-tone Supplement: Wild Life in Australasia, **1**, *between* 336 and 337

Playwright is the description applied to one who writes plays. Literally, the word means a maker of plays.

Plaza de Mayo is the most famous "square" in Buenos Aires, capital of the Argentine.
Picture: **4**, 323

Plesiosaurus, a prehistoric creature resembling a turtle which reached a length of 15 ft. or over, **1**, 26
—known as the sea-dragon, **1**, 26
Picture: **1**, 23

Pliant means easily bent; flexible. The young branches of the willow tree are very pliant.

Plimsoll Mark. The mark that every British merchant ship must carry on both sides to show the maximum depth to which it may be loaded under different conditions.
It was named after Samuel Plimsoll (1824–98), the "Sailor's Friend," to whom its introduction was due, **9**, 398

Picture: The Mark That Saves Sailors, **9**, 399

Pliny (Gaius Plinius Secundus) known as Pliny the Elder (A.D. 23–79). One of the earliest of historians, he also wrote about natural history, botany and such subjects. He lost his life in the eruption of Mount Vesuvius, **7**, 1, 348

Pliosaurus, one of the largest prehistoric marine monsters; an aquatic reptile. *Picture:* **1**, 24

Ploesti. One of the five largest towns in Rumania and the centre of the oil-fields of the Prahova valley, **4**, 102
Pictures. **4**, 104, 351

Plönlein is the name of a picturesque street junction in the old walled town of Rothenburg, on the River Tauber in Bavaria, Germany.
Pictures: **4**, 78

Plough. An agricultural implement. The first cut in the soil is made by the coulter and this is followed by the share and then the mould-board. The plough turns over the soil and prepares it for seed sowing, **6**, 382

Plover. Name given to a large family of birds which frequents the shores and moorlands. Many of them are found in Britain. The *Golden Plover* has greyish-black plumage, a plump, bullet-headed, short-billed bird, and is rapid on the wing or in running over coastal mud or pasture land. It is common on British moorlands.
Generally it is more of an inland bird than the *Grey Plover* which is only rarely found away from the shore
The *Ringed Plover* has a black and white face and is nearly 8 in. long. It is common round our coasts and is mainly a resident here. It often nests inland and visits the banks of meres and rivers.
A summer visitor is the *Kentish Plover* and is only rarely seen elsewhere except the Kent and Sussex coast It nests in the sand or among shingle.
The *Green Plover* or Lapwing (*q.v.*) is familiar throughout the British Isles and is often known as the Peewit.

Plumage. The feathers on a bird, collectively. The Bird of Paradise is famous for the gay colours of its plumage.

Plumbago. (1) Another name for graphite or blacklead, which is used for making pencils, **6**, 5, 136
(2) A family of greenhouse plants, most of them bearing blue flowers.

Plumcot. A fruit produced by Luther Burbank from two varieties of plum and an apricot, **1**, 379

Plume Thistles are often found in meadows. They have a spreading root system, **1**, 301

Plummet. A weight attached to the end of a line. It may be used as a plumb-bob, or for measuring the depth of water, or to keep a fishing tackle at the bottom of water.
As its name implies, it is made of lead if it is to be very heavy for its size.

Plums belong to the family of stone fruits, which includes damsons, bullaces and gages, peaches, cherries, etc.

Plutarch, a Greek biographer. He probably lived from the reign of Nero to that of Hadrian (*c.* A.D. 46–120), **7**, 286, 348

Pluto. (1) Among the ancients Pluto was a god of the underworld.
(2) Pluto is the latest addition to the planets of the solar system, having been discovered as recently as 1930. In size it is apparently similar to one of the smaller planets such as the earth or Mars, but our knowledge of its character is at present scanty. It is 3,670 million miles from the sun, being now the "outermost" planet. Pluto has the most eccentric orbit of all the major planets. It is thought that Pluto's orbit sometimes crosses that of Neptune, but its nearest approach to Neptune is 240 million miles, **8**, 108; **9**, 297

Pluto stands for Pipe Lines Under The Ocean. It was the name given to preserve secrecy for the project undertaken during the last stages of the World War, 1939–45, by which a pipe-line was laid under the English Channel to convey huge quantities of petrol from this country to the Continent in readiness for the final advance into Germany. It was salvaged from the sea-bed after three years hard work and nearly a million pounds' worth of lead and steel alloys were recovered. Each mile of Pluto weighed more than 50 tons, **7**, 396
Picture: **7**, 393

Plymouth, Devon, is the largest town in south-west England, a naval port and place of call for ocean liners. The Hoe is an open space overlooking Plymouth Sound Its harbour is protected by a strong breakwater, **3**, 46
—sailing of the Pilgrim Fathers, **2**, 155, 158, 407
Pictures: Drake Playing Bowls on the Hoe, **2**, 153
Plymouth Hoe To-day, **10**, 303
Colour Plate. The Departure of the Pilgrim Fathers, **2**, *facing* 156

Plymouth, Massachusetts, U.S.A., is where the Pilgrim Fathers landed in 1620. This is commemorated by a statue on the site of the landing.
Photo-tone Supplement: United States of America, **4**, *between* 272 and 273

Plymouth Rock. Name of a popular breed of domestic poultry, **8**, 317

Plynlimmon. A mountain height of Wales, nearly 2,500 ft., where the counties of Montgomery and Cardigan meet, **3**, 108

Plywood is made by gluing together three or more veneers of wood with the grains of the layers running in different directions, **9**, 374
Picture: Timber Workers in Australia, **9**, 375

P.M. means *post meridiem, i.e.*, after twelve o'clock noon and before twelve o'clock midnight.

P.M.G. means Postmaster-General.

Pneumatic means something moved or worked by air; filled with air; made specially to contain air, as pneumatic tyres.
Pneumatic tyres were invented by R. W. Thomson, of Stonehaven, in 1845, but for lack of suitable materials did not prove successful. The idea was re-invented in 1888 by J. B. Dunlop, a Belfast veterinary surgeon who applied the tyres to bicycle wheels, **9**, 344

Po. Name of an important river of Italy. It rises in the Alps and flows into the Adriatic.

Poas is one of the lofty volcanic mountains of Costa Rica, **4**, 304

Pochard. A small form of wild duck, grey and white with reddish head; it is found on large sheets of inland water and near the sea-shore.
Special Colour Supplement: British Wild Birds, **1**, *between* 160 and 161 (Plate 4)

Pocitos Beach is a noted bathing beach of Montevideo, the capital of Uruguay
Picture: **4**, 336

Pocket Gopher. Name given to an animal found in America. It is reddish-brown in colour and has cheek pouches on the outside of its face.

Poe, Edgar Allen (1809–49). American author, specially famed for his short stories, with their strange horrific background such as *The Fall of the House of Usher, The Pit and the Pendulum* and *The Cask of Amontillado.* He was one of the earliest writers of mystery and detective stories *The Murders in the Rue Morgue*, and the investigators in these and similar stories were the forerunners of the modern detective in fiction.

Poetry. No clear-cut definition can be given of this word which was first used by the Greeks. Broadly it is used today for the imaginative expression of emotion or elevated thought or feeling, and these feelings are usually expressed in metrical form. It is a form of literature which appeals to the ear as music does and to the understanding in the same way that good prose does.
The oldest English poems, written in English, were those of Caedmon, a herdsman of Whitby Abbey in the seventh century. "Beowulf" is another old poem by an unknown author which was probably well-known long before it was written down in the tenth century, **9**, 337
—Poetry Books for Boys and Girls, **7**, 274
See also *The Lives of the Great Poets*, **7**, 119 *et seq.*
A Children's Treasury of Verse, **9**, 85 *et seq.*
Picture: One Madcap Windy Day, **9**, 84
Colour Plates: The Canterbury Tales, **7**, *facing* 124
Shylock, Salanio and Salarino, **7**, *facing* 125
How They Brought the Good News, **7**, *facing* 144
The Fairies Song, **9**, *Frontispiece.*

Poets' Corner, The, is a part of Westminster Abbey containing the tombs of some of our greatest poets and writers, including Dickens, Tennyson, Browning, Spenser, and Chaucer.

Pohuto is the name of the largest and most famous of the geysers of Whakarewarewa Valley, in the Rotorua district of North Island, New Zealand.
Picture: **3**, 255

Poi is the name given to a romantic dance performed by Maori women of New Zealand, **3**, 260
Picture: **3**, 251
Poinsettia. A plant of warm climates which has very large, ragged, scarlet blossom, **3**, 228
Point Barrow is a promontory on the north coast of Alaska, **2**, 361
Point Hope is a promontory of Alaska where traces of an ancient civilisation have been found, **4**, 296
Poisoning. How to give first aid, according to the type of poison which has been taken, **8**, 242
Poison Ivy. A climber of the Rhus family resembling the Virginian creeper. If a human being is stung the poison of this plant spreads all over his body, **1**, 345
Poisonous Snakes. What makes the bites of some snakes deadly? **1**, 143
Poison Plants. About hedgerow wild fruits and berries that are poisonous to eat, **1**, 344; **8**, 244
Poitiers, Battle of (1356) was fought between the French under their King, John II, and the English under the Black Prince, who won the day, **4**, 7
Pokal is the name of a huge goblet holding three quarts of wine which was emptied by one of Rothenburg's town councillors at a draught during the Thirty Years War. Rothenburg is an old, walled town of Bavaria.
Picture: **4**, 77
Pola is the name of the former Italian naval base at the northern end of the Adriatic Sea. It now belongs to Yugoslavia, **4**, 156
Poland. A large republic of Eastern Europe having Germany to the west and the Soviet Union to the east. Before the Second World War, Poland was primarily a farming country, but nowadays her industry is equally important. She produces considerable quantities of textiles and coal, steel, pig-iron, and coke. She has important forests. As a result of the last war, Poland's frontiers have undergone drastic change. She has ceded to Soviet Russia some territory in the east and has gained from Germany territory in the west. The latter includes important industrial regions. The capital is Warsaw and the population is nearly 24 million. See *Poland—Past and Present*, **4**, 123
—invaded by Germany and Russia (1939), **2**, 247
—Catherine the Great's conquests in Poland, **4**, 106
Pictures: The Ancient Town Hall at Torun, **4**, 123
Spring-time in Poland, **4**, 124
In Poland Today, **4**, 125
In the World's Most Amazing Salt Mines, **4**, 126
Poland Rebuilds, **4**, 127
Carvings from Natural Rock-Salt, **4**, 128
Polar Bear. See *Bear, Polar.*
Polecat. An animal belonging to the Weasel family. It is 17 or 18 ins. long, with a short bushy tail. The colour is generally yellowish-brown to blackish brown, while the rims of the ears and lips are white. It makes its home in abandoned rabbit holes and crevices in rocks Ferocious in attacking it lives on smaller animals of the woodlands.
Poles, Geographical, are the ends of the imaginary axis on which the earth revolves.
The North Pole was first reached by Commander Robert Peary, of the U.S.A. Navy in 1909; and the South Pole by Captain Roald Amundsen, the Norwegian explorer, in 1911, **9**, 316
See also *Call of the North*, **2**, 355; and *Heroes of the Antarctic*, **2**, 366
Colour Plate: Captain Scott's Antarctic Ship *Discovery*, **2**, *facing* 305
Photo-tone Supplement: In the Polar Regions, **2**, *between* 368 and 369
Polaris, or the Pole Star, is 44 light-years away from the earth. It is a bright star in the constellation *Ursa Minor*, and is the star nearest the celestial pole in the northern Hemisphere. The celestial poles are two points on the heavens opposite to the two poles of the earth, **8**, 170
Polder is the name given in Holland to land reclaimed from the sea by means of dykes, **4**, 30
Picture: **4**, 19
Poldhu, Cornwall. From here Marconi sent the first successful messages by wireless to Nova Scotia and the United States of America, **2**, 225
Polar Exploration is the term used for the many voyages made by explorers in the Arctic and Antarctic regions as well as the later attempts to discover the North and South Poles. See *The Call of the North*, **2**, 355; and *Heroes of the Antarctic*, **2**, 366
Colour Plate: Captain Scott's Antarctic Ship *Discovery*, **2**, *facing* 305
Photo-tone Supplement: In the Polar Regions, **2**, *between* 368 and 369
Polesden Lacey. A mansion near Bookham in Surrey where King George VI and Queen Elizabeth spent their honeymoon, **3**, 413
Picture: **3**, 409
Pole Star. See *Polaris.*
Police. A civilian or semi-military force appointed by the governing authorities of a country or district to preserve law and order. In England it was not until after 1829 that there was any properly organised police force, though before then there had been high constables and parish constables to keep the king's peace. In many countries the police are semi-military forces often with wider powers than in this country.
—except in Greater London, the police in England and Wales are controlled by the local authorities. The City of London has its own police force, while for the rest of Greater London the Metropolitan Police Force, controlled directly by the Home Secretary, are responsible. See *How the Police Work*, **9**, 75 *et seq.*
Pictures: On Point Duty, **9**, 75
The Old Policemen, **9**, 77
Policemen in the Making, **9**, 79
The Country Policeman at Work, **9**, 80
Safety on Our Roads, **9**, 81, 83
The Finger-print Department, **9**, 82
Photo-tone Supplement: Men Who Maintain Our Laws, **9**, *between* 80–81
Polish Corridor. The name given to the strip of territory which before the Second World War, separated Germany from her province of East Prussia, **2**, 247; **4**, 126
Political Party. A group of persons of similar political views who work together to advance their aims, mainly by the holding of public meetings, the distribution of literature, and the selection of candidates who will support their views in Parliament and on local authorities. In Great Britain the principal parties are the Labour, Conservative and Liberal. There are also much smaller parties such as the Co-operative, Independent Labour, Communist, Commonwealth, Scottish Nationalist, Welsh Nationalist, and Independent members attached to no party, **9**, 50
Pollack. Name of a food fish of the cod tribe. It is found off the coasts of Great Britain.
Pollard. The name given to a tree from which all the top branches have been cut so that new growth may develop. Willow trees are frequently pollarded, **1**, 287
Pollen is carried in the form of dust or small grains on the stamens of flowers. Its purpose is to fertilise. See *Pollination.*
Pollen Brush. The hairs which form round hollow places on the hind legs of honey bees, **1**, 260
Pollera is a garment worn by the primitive Indians of Panama, **4**, 306
Pollination is the process by which the pollen grains produced in the anthers of the stamen of a flower are brought to the stigma of the pistil of another flower which leads to the fertilisation of the flower and the production of seeds. The main pollinating agents are insects, chiefly bees, butterflies and moths, **1**, 259–264
Pictures: Pollination and the Bee, **10**, 297
Poll-Tax. A tax levied on each poll, or head, **2**, 126
Polo, Marco (1254–1324). A famous traveller and explorer. With his father Nicolo Polo and his uncle Maffeo Polo, he journeyed to China from his native city of Venice, **2**, 267
—Marco Polo and Australia, **3**, 199
—Marco Polo and Madagascar, **4**, 18
Pictures: The Long-Lost Travellers, **2**, 267
Marco Polo Writes His Adventures, **2**, 268
Starting Chinawards, **2**, 269
At the Royal Court, **2**, 270
Polonnaruwa is the name of one of the so-called buried cities of Ceylon, **3**, 368
Polyanthus. A perennial plant belonging to the Primula family. The flowers are like primroses, but there is a wide variation of colour, **8**, 278
Polycrates (died 522 B.C.). The tyrant or ruler of Samos, an island in the Ægean Sea. He became rich and powerful, **2**, 10
Pictures: The Messenger of Oroetes, **2**, 10
A Fish for his Table, **2**, 12
Polygonatum. The family name of the perennial plant Solomon's Seal.
Polymerisation is a technical term to express the way in which chemical changes can unite a mass, whether large or small, into a substance that is permanently set, **6**, 354

POLLINATION AND THE BEE



In order to produce their fruits or seeds the flowers of nearly all plants and trees must be fertilised by the pollen from the stamens of one flower being carried to the pistil of another. With certain trees, such as the conifers, the pollen is carried by the wind from the male flower to the pistil of the seed-producing flower. This is a wasteful and sometimes uncertain method and many plants have improved upon this by attracting insects to the flowers by their colouring and by the nectar they contain and the pleasant odour that has its special appeal to different insects. Thus, certain flowers are particularly attractive to bees while other flowers appeal to butterflies, moths, wasps, flies, and other insects. Even small birds such as the humming-bird may be the pollen carriers in the case of certain flowers.

In the first picture (above) one of the most interesting among the million or so different species of insects known to the entomologist is seen. A Bumble Bee is out on its round to gather honey and pollen to take back to the nest. Here it is seen as it approaches the flower of a snapdragon. As it reaches the flower it presses down the lip to gain entry. Right to the heart of the flower it presses, as seen in the second picture (right). The bee's glossa or "tongue" then probes the glands in which the honey producing nectar is stored. Meantime the broad hind legs with the branched hairs that retain the pollen grains are collecting their share of the gifts the flower offers.





In this third picture the bee has left the snapdragon and is flying away to the next to collect more nectar to add to the store in its honey bag. The bees convert the nectar into honey. Some of the pollen will also be used, but in visiting the next flower a certain amount of the pollen is brushed off as the bee enters the flower. In this way the pollen is brought from the stamen of one flower to the pistil of another and so the process known as *pollination* (see p. 206) is carried out. With a full load of nectar and pollen-laden thighs the Bumble Bee flies heavily back to the nest where the nectar is converted into honey and stored in the cells of the honeycomb.

Polynesians. One of the races of people living in the area of the Pacific islands. Polynesians are the most artistic of the native peoples of this part of the world, **3**, 390
—the Maoris came originally from these islands, **3**, 250

Polyphemus the One-eyed Giant. A Tale from the Greek, **5**, 372

Polyporus Squamous. Name given to our largest fungus. A specimen weighing 34 lb was once found, **1**, 362

Polyps. This is the name given to the amazing sea organisms which have built, and are still building, the Great Barrier Reef off the Pacific coast of Queensland, Australia, **3**, 228
Pictures: The Great Barrier Reef, **3**, 227
Uncovered by the Tide, **3**, 230

Polyvinyl Chloride. The name of a plastic material used in making waterproof coats.
Picture: **6**, 370

Pomarre was a queen of the island of Tahiti, **2**, 346

Pomato. A white tomato growing on a potato plant, the invention of Luther Burbank, **1**, 379

Pomegranate. A fruit tree which grows in part of Asia. It produces many seeds in each fruit.

Pomerania. A district of northern Germany which includes the island of Rugen. It was formerly part of Prussia, but in 1945 a large portion East of the River Oder as well as the former capital of Pomerania, Stettin (Szczecyn), were transferred to Poland.

Pomeranian Name of a breed of small lap dog, **8**, 315

Pompeii. A city of Italy of ancient Roman times It was destroyed in an eruption of Vesuvius in A.D. 79, **2**, 403, **4**, 152
Pictures: Vesuvius and Pompeii, **4**, 145
Special Colour Supplement: In Ancient Rome (Amphitheatre at Pompeii), **7**, *between* 336 and 337

Pompey. One of the rulers of Rome in the time of Julius Cæsar, by whom he was decisively defeated in 48 B.C., **2**, 75

Ponce de Leon, Juan. An early sixteenth century Spanish adventurer who explored and named Florida. He was the first governor of Puerto Rico, which was once part of the Spanish Empire and is buried at San Juan, the chief town of that island, **4**, 296

Pondicherry is the chief French settlement in India. It is associated in British history with Clive who took part in the Battle of Pondicherry, **2**, 185
Picture: **2**, 185

Pond Skater. Name given to an insect with a boat-shaped body found in ponds. It propels itself through the water with long legs.

Pons (the Latin word for " bridge ") is used to denote a part of the brain which connects the brain stem with the upper parts of the brain, and also connects the two hemispheres of the *cerebellum*, **6**, 404

Pons Winnecke is the name of a famous comet. It was first seen by an astronomer named Pons and then by one named Winnecke. It makes its appearance about every six years.
Picture: **8**, 165

Pont de Jena is a bridge over the Seine in Paris named after one of Napoleon's victories.
Picture: **4**, 11

Pont de l'Archévêche means Bridge of the Archbishop and crosses the Seine to join the Ile de la Cite to the rest of Paris.
Picture: **4**, 7

Pont Du Gard is the name of a Roman aqueduct to be seen near the town of Nimes, France, **4**, 14

Pontefract. A town of the West Riding of Yorkshire. It was the scene of the murder of Richard II in 1399. The well-known " Pomfret " cakes are made here from liquorice

Ponte Vecchio. These Italian words mean " old bridge " and refer to a famous bridge over the Arno at Florence in Italy.
Picture: **4**, 140

Pontius Pilate. He was the Roman governor of Judea at the time of Jesus Christ It was during his governorship that Christ was crucified, **2**, 403

Pontoon. An open boat or raft used to support the roadway of a military bridge; a huge float for raising sunken ships; or forming part of a floating dock.

Pontresina is a town of the Engadine, in Switzerland, a noted holiday centre.
Picture: **4**, 59

Pontypool, Monmouthshire, is a centre of the tinplate industry and of British nylon production, **3**, 96

Pontypridd is an industrial town of Glamorganshire, centre of a colliery district.

Pony. One of the hoofed animals in no material respect different from the horse except size, **1**, 97
Pictures Wild Ponies, **1**, 90
Ponies at Show, **1**, 93
Shetland Pony and Foal, **1**, 96

Poole, an ancient and historic port of Dorset. At Brownsea, or Branksea, Island, in Poole Harbour, the first gathering of Boy Scouts was held in 1908.

Pool of Immortality is the name given to the sheet of water in which is built the Golden Temple of Amritsar, India, **3**, 338
Picture: **3**, 339

Pool of London. An historic stretch of the River Thames between London Bridge and Tower Bridge where ocean-going ships load and unload their cargoes.
Picture: Shipping in the Pool, **8**, 93
Colour Plate: The Pool of London, **3**, *facing* 84

Poona is a town of the Province of Bombay, in the Dominion of India. It is a manufacturing and military centre, **3**, 323

Poor Laws have been made by Parliament many times in England's history, and had as their object the provision of work and of shelter (in workhouses) for the poor and needy. The most notable Acts dealing with this question were those of 1601, 1782, 1795, and 1834. The whole system by which the poor and needy were cared for has since been revised by such measures as the Local Government Act (1929), **2**, 411

Poor-Man's-Weatherglass. Popular name for *Scarlet Pimpernel* (*q.v.*).

Popayan is the chief town of the department (province) of Cauca in Columbia. There are gold, silver and copper mines in its vicinity.
Picture: **4**, 333

Popcorn. The ripe grains of maize or Indian corn when roasted.

Pope, Alexander (1688-1744). Great English poet. Born in London, he is famous for his translation of the *Iliad* into English verse and for his satirical poems, **2**, 179; **7**, 138
Picture: **7**, 138

Popinjay. In earlier times the word was used for a parrot. The name was also given to a dummy bird used as a target. It is still used in heraldry for a parrot, and in a general sense to describe an overdressed conceited person.

Poplar. We have white and black poplars as well as the familiar Lombardy poplar. The last-named comes from the East and is not a native of Lombardy (Italy). It is tall and straight, and can reach a height of 150 ft., **1**, 332, 408
Pictures Leaves of the Poplar, **1**, 289
Poplars in Summer, **1**, 321
Poplars in Winter, **1**, 321
Trunk of Lombardy Poplar, **1**, 318
White, Black and Lombardy Poplars, **1**, 405

Poplin is a ribbed fabric woven with a silk warp and worsted weft, largely used as a dress material and for upholstery. It was introduced into England and Ireland by French Protestants seeking refuge from persecution in the seventeenth century.

Popocatepetl is a volcano of Mexico rising to a height of 17,540 ft It has been dormant for more than a century. The name means " smoking mountain."

Poppy. A plant having a milky juice, with lobed or cut alternate leaves Certain kinds are found as wild flowers, but others are cultivated as well-known hardy annuals. Shirley poppies are one of the attractive varieties, **8**, 278
— Oriental This is the perennial poppy, with large crimson, pink or white flowers, **8**, 278
—the majority have four petals though there are a few with six petals, **1**, 296
Picture: **1**, 296
Special Colour Supplement British Wild Flowers (Field Poppy), **1**, *between* 304 and 305 (Plate 1)

Population of the World. See *Atlas Supplement*, end of this Volume.

Porcelain is the name given to fine pottery distinguished from earthenware by being a translucent substance coated with a hard transparent glaze. It was discovered by the Chinese for which reason it is often called china. Not until the seventeenth century was it introduced into Europe. In each country its manufacture has been dependent on finding the right materials at hand. See *Pottery*.

Porcupine. An animal found in many parts of the world which defends it-

self with stiff quills. A gnawing animal, or rodent. The name means "shiny pig," **1**, 116; **9**, 364
Porcupine Fish. Fish whose bodies are covered with spines, **1**, 220
Porcupine Goldfield is in the Canadian Shield country of Ontario and is one of the richest goldmines in the Dominion, **3**, 164, 196
Porcupine Wood. Name given to the timber of the coco-nut palm, **1**, 310
Pori is a timber port of Finland situated on the Gulf of Bothnia, **4**, 48
Porjus is a town of Sweden famous for its great power station, **4**, 38
Porlock. A town in Somerset. About five miles away is Dunkery Beacon, the highest point on Exmoor.
Picture. **3**, 411
Porpoise. A water-loving animal from 5 ft. to 8 ft. in length. It lives mainly on fish, **1**, 108
Picture: **1**, 110
Porsena, Lars. See *Lars Porsena.*
Port. The side of a ship known as the port side is the left looking forward towards the bows. Starboard is the right side, **9**, 397
Portadown is a town of County Armagh in Northern Ireland. It is a centre of the linen trade, **3**, 144
Port Arthur. (1) A harbour of Manchuria now a Soviet-Chinese naval base. (2) A port of Texas, U.S.A. It is a centre for oil. (3) An important grain port on Lake Superior, in the Province of Ontario, Canada, **3**, 178
Port Augusta is at the head of the Spencer Gulf, South Australia. It stands on the Transcontinental Railway, **3**, 236
Port au Prince is the capital of the republic of Haiti. It is also the chief port and has a population of about 200,000, **4**, 310
Port Bell, a place of call for B.O.A.C. flying boats, is in Uganda and stands on the shores of Lake Victoria near Kampala, **3**, 228
Port Chalmers is the port near the city of Dunedin in the South Island of New Zealand, **3**, 270
Port Darwin. See *Darwin.*
Port Elizabeth is a town of Cape Province, South Africa, standing on Algoa Bay. It is one of the chief ports of the Union and is where the Albany Settlers landed in 1820, **3**, 276
Picture **3**, 280
Porter-Rhodes. The name of a famous diamond discovered in the centre of the Kimberley mine, Cape Province. It was valued at £60,000, **3**, 294
Porter, William Sydney. See *Henry, O.*
Port Glasgow was originally the port for the city of Glasgow. It stands on the Clyde in Renfrewshire and has docks and shipbuilding yards.
Port Harcourt. A port of the colony and protectorate of Nigeria in British West Africa. It stands in the delta of the Niger River, **3**, 382
Porthcawl is a holiday and seaside resort of Glamorganshire, on the Bristol Channel.
Port Herald is a town of Nyasaland, at the extreme south of the country.
Portinari, Beatrice. A beautiful girl with whom the great Italian poet Dante fell in love, **7**, 125
Picture: **7**, 125
Portishead. A small coastal resort and residential centre of Somerset, on the Bristol Channel. It has docks and granaries.
Port Jackson is the proper name of the harbour of Sydney, New South Wales, Australia, which is one of the finest natural harbours in the world. It was on the shores of Port Jackson that Captain Phillip established the first settlement in 1788.
Pictures, **3**, 205
Port Kembla is a port of New South Wales, Australia, a little to the south of Wollongong. It is directly concerned with the shipment of iron ore from such places as Yampi Sound, **3**, 239
Pictorial Map: **3**, 243
Portland. (1) A town and seaport of Maine, U.S.A. It forms a winter sea-gate to Canada, **3**, 161
(2) A city of Oregon, U.S.A., and a centre for timber and wheat.
Portland Cement is a mixture of chalk or limestone ground up dry or with water. This mixture is burnt into hard clinker and then ground into fine powder, **9**, 411
Portland Isle. Name given to a part of the Dorset coast connected to the mainland by the Chesil Beach, **3**, 38
Port Laoighise, County town of Leix, Eire. Formerly known as Maryborough (*q.v.*)
Portmadoc. A town of Carnarvonshire, North Wales. It is a well-known centre for slates which are quarried in the district.
Port Moresby is the chief town and port of the Territory of Papua which is administered by the Commonwealth of Australia, **3**, 388
Port Natal was once the name for Durban, Natal.
Port Nicholson is at the tip of North Island, New Zealand. It is the port for Wellington, the capital, **3**, 266
Picture **3**, 265
Port of London Authority. An organisation which came into operation in 1909 to take over the control and administration of the docks comprising the Port of London. It controls the river and docks from Teddington to the Estuary. See *A Visit to London's Docks,* **8**, 87 *et seq.*
Picture Headquarters of the Port of London, **8**, 87
Port of Spain. The capital of the island of Trinidad in the British West Indies. Its harbour can now accommodate the largest ships, **3**, 398
Porto Rico. See *Puerto Rico.*
Porto Santo is an island of *Madeira* (*q.v.*)
Port Phillip is the name of the early settlement on the shores of Port Phillip Bay, Victoria, Australia, where Edward Henty settled in 1834, **3**, 232
Port Radium is on Great Bear Lake in Canada's North-West Territories. Here people worked during the war to produce pitchblende. From this radium and uranium were obtained.
Picture: **3**, 191
Portrush, a holiday resort of Antrim, Northern Ireland. Close at hand is the Giant's Causeway, **3**, 146
Picture: **3**, 141
Port Said is a town of Egypt at the entrance to the Suez Canal. From here ships in the canal are controlled, **3**, 195
Pictures: A Gateway to the Suez Canal, **4**, 191
Colour Plate: Coaling at Port Said, **4**, *facing* 196
Portsmouth. An important seaport and naval station in Hampshire. Here may be seen Nelson's flagship *Victory,* **3**, 34
—Portsmouth was severely damaged during the Second World War by air attacks, **2**, 251
Port Sudan. Seaport of Sudan on the Red Sea and terminus of a railway from Atbara. It has a well-equipped harbour.
Port Sunlight, near Birkenhead in Cheshire, was founded by Messrs. Lever as a model village for the housing of their workers.
Port Swettenham is the seaport for Kuala Lumpur, capital of the Federation of Malaya, **3**, 402
Port Talbot, Glamorgan, is a great centre of the copper and tin-plate industries, **3**, 96
Pictures Margam Abbey Works, **6**, 55, 74, 75, 82,
Portugal is a country of western Europe with a long Atlantic coastline. It is mountainous in parts and grows more cork oak than any other country in the world. Cereals and fruits are also grown as well as olives and grapes. There are important wine and fishing industries. The capital is Lisbon. The population is about 8 million, **4**, 137 *et seq.*, 366
—Britain's help to Portugal against Napoleon, **2**, 201
Pictures Beautiful Cintra, **4**, 137
Portuguese East Africa. See *Mozambique.*
Portuguese Man of War is the popular name for the Physalia group of the jellyfish family. The separate members are attached to a large float filled with air; some of them act as feeders while others have stings which can seriously harm anyone handling them.
Portuguese West Africa. See *Angola*
Poseidon was the Greek god of the sea, whom the Romans identified with their Neptune, **6**, 139
Picture **9**, 16
Possum. See *Opossum.*
Postage Stamps first came into use on May 6th, 1840, **9**, 328
See also *Stamp Collecting,* **4**, 397 *et seq.*
Postal Union, Universal. See *Universal Postal Union.*
Postcards first came into use in 1870.
Post-Chaise was the name given to a pair-horsed vehicle used in the days of the coach and four and before the coming of railways.
Post Haste means to travel as rapidly as possible. It comes from the days of posting, when fresh horses were obtained at a posting house. Our words post and post office have the same origin, **6**, 277
Posthumous means something coming, happening or lasting after death. A posthumous child is one born after its father's death, a posthumous book is one published after the author's death.

Postilion. A rider on a horse drawing a coach or carriage. In the days before railways, when post-chaises were used for travelling, a postilion rode on the near (left-hand) horse of a pair, or on the near leader of a four-horse team to act as driver.
Originally, the word meant a postman carrying the mails on horseback.

Postmaster-General. The member of the British Government who is in control of all departments of the Post Office and responsible to Parliament for its policy and efficiency. He has also certain responsibilities under the charter of the B.B.C. and the licences granted to listeners are issued by him.
Various other duties also come under his control as, for instance, the payment of retirement allowances under the National Health Acts. See also *The Business of the G.P.O.*, **6**, 277 *et seq.*

Post Office. The first inland post for public use was established in 1635 by Royal proclamation but not until 1710 was a general post office created for the three Kingdoms and the colonies under the control of a Postmaster-General. The famous mail-coach service came into being in 1784, roads were improved and the postal service vastly improved. The first experimental mail service by trains was made in 1830 between Liverpool and Manchester.
The big postal reform whereby penny postage came into operation throughout the Kingdom began in January 1840 and became a great success when the railways became established. Then came prepayment by means of the adhesive postage stamps instead of collection on delivery.
The Penny Post disappeared during the war of 1914–18 and further changes in the rates for letters and parcels have been made since. The headquarters of the G.P.O. are at St. Martin's-le-Grand, London, E.C.1. The name originated in Roman times from the posts set at regular intervals along the main roads where messengers were stationed; it was later used for the posting houses where horses were changed and letters received for dispatch. Today there are some 25,000 post offices in Great Britain. See *The Business of the G.P.O.*, **6**, 277 *et seq.*
Pictures: Bringing the Morning Letters, **6**, 277
First Stage in the Journey, **6**, 278
Where Nimble Fingers Sort the Mail, **6**, 279
A Postman of the Fens, **6**, 280
All Part of His Daily Round, **6**, 281
The Line-side Apparatus, **6**, 282–283
Goodbye to the T.P.O., **6**, 283
A Mail Coach of 1832, **6**, 285
London's Special Postal Railway, **6**, 287
Rugby Radio Station, **6**, 288

Post Office Mauritius. Name of a famous 2d. postage stamp of much interest to collectors.
Picture: **2**, 241

Post Office Railway. An underground line belonging exclusively to the G.P.O. It is upwards of six miles in length and connects sorting offices with London railway termini. Its driverless electric trains carry 30,000 bags of mail a day, **6**, 284
Picture: **6**, 287

Postumia. Name of a famous cavern at Adelsberg, Italy. It possesses great stalagmites rising like cacti from the floor.

Potala is the name of the official residence of the Dalai Lama, the ruler of Tibet, in his capital Lhasa, **4**, 238

Potaro. A river of British Guiana and a tributary of the Essequibo. On its course are the beautiful Kaieteur Falls, **3**, 385

Potassium. A very light and soft silvery metal, one of the elements (symbol K). It floats in water and can be moulded by the pressure of the fingers.
Though of little value by itself, potassium is very useful in combination with other elements.

Potato-Digger. A machine with fingers on the outside of a revolving wheel which throw the tubers out of the ridges, **6**, 390

Potatoes form one-quarter of the food of Europeans and English-speaking people. The first potato was introduced into Europe by Sir Walter Raleigh and planted in a garden in London in 1585, but for nearly 200 years it was not generally used as a food, and it is only since the middle of the 19th century that it has been properly cultivated. The tubers yield spirit, glucose, flour and starch, **1**, 309; **2**, 146
- staple food in Ireland, **3**, 148

Potchefstroom is a town of the Transvaal, Union of South Africa.

Pot Marigold. Name given to the hardy annual *Calendula* (*q.v.*).

Potomac. A river of the U.S.A., it flows through Washington the capital, **4**, 268

Potoroos. Name sometimes given to *Kangaroo Rats* (*q.v.*).

Potsdam. A town of Brandenburg in Germany. It was famous at one time as the residence of the German emperors, **4**, 76

Potter, Beatrix (1866–1943). A well-known writer of stories for young people. The *Peter Rabbit* books though small are delightful examples of stories for very young children, and the author's own illustrations fit the stories perfectly, **7**, 274
Picture: Where Beatrix Potter lived, **7**, 272

Potteries is the name given to a district of Staffordshire famous for china and earthenware manufacture. Stoke-on-Trent is the chief centre, **3**, 71 and 73
Picture: Stoke-on-Trent from the Air, **3**, 73
Pottery Kilns at Hanley, **3**, 74

Pottery as a broad term includes all earthenware vessels, certain building materials and various types of ornaments. The art of the potter goes back to prehistoric times and the potter's wheel has changed very little since the days of the early Egyptians except for the fact that the wheels are usually power-driven today.
In this country the chief centre of the industry is the Stoke-on-Trent district, but there are various other districts in Great Britain and Ireland where pottery is made, **9**, 195 *et seq.*
Pictures: In the Heart of the Potteries, **9**, 195
Preparing the Clay, **9**, 196
A Cornish China Clay Pit, **9**, 197
The Hands of the Thrower, **9**, 198
An Artist on Porcelain, **9**, 199
How Pottery is Baked in a Kiln, **9**, 200
Spode and Worcester China, **9**, 201
Wedgwood and Chelsea, **9**, 202
The Story of Willow Pattern, **9**, 203
The First English Teapot, **9**, 204

Pottery as a handcraft means the making of pots and other receptacles by hand, *i.e.*, without the aid of a potter's wheel and a kiln, **8**, 402
Pictures: The Beginning of the Coil, **8**, 403
The Raising of the Sides, **8**, 403
A Pot made by Coiled Pottery, **8**, 404

Pouched Rat. See *Pocket Gopher.*

Poultry is full of interest and this livestock may be made most profitable. Breeds to choose; housing, feeding; breeding, etc., **8**, 316

Poussin, Nicolas (1594–1665). A well-known French artist. He painted many historical scenes. There are fine examples of his work in the National Gallery, London, and in the Louvre, Paris.

Pout. Fish belonging to the cod family and similar to the whiting but has a deeper body and a chin barbel. Sometimes known as the bib or the brassy in certain districts.

Powell, Major John Wesley. In 1867 he faced the perils of a trip through the canyons of the Colorado river, **2**, 353
Pictures: Into Unknown Dangers, **2**, 353
Within the Canyon, **2**, 354

Powell River is in British Columbia. Newsprint, the product of Canada's vast forests, is shipped from its docks.
Picture: **4**, 383

Power Station is the term applied to a great building where electricity is generated, **6**, 292
Pictures: In a Power House, **6**, 290–1
Battersea Power Station, **6**, 299
Kingston-on-Thames Power Station, **6**, 300
Cliff Quay, Ipswich, **6**, 301
Photo-tone Supplement: Modern British Art (Power House, Battersea), **7**, *between* 112 and 113
See also *Electric Power from Water*, **5**, 63

Powys, Vale of. This is the name given to the valley of the Upper Severn, **3**, 100

Poynter, Sir Edward, R.A. (1836–1919). British painter. Famous for his portraits in oils, mosaics, historical pictures and wall decorations, **7** 98
Pictures: The Catapult, **2**, 62
The Ides of March, **2**, 77
Outward Bound, **7**, 97

Poznan. This is the name of a town and district of central Poland. The town

has a population of nearly 300,000 and stands on the river Warthe.
Picture: **4**, 124

P.P.C. means *pour prendre conge, i e.*, to take leave.

P.R.A. means President of the Royal Academy.

Praça Paris is a fine boulevard in Rio de Janeiro running along the shores of Botofago Bay.
Picture: **4**, 313

Prague. Prague is the capital of Czecho-Slovakia and stands astride the river Vlatava. It is a city rich in history and because of its wonderful architecture has been called "the Rome of the North." It is an important textile, glassware, and sugar beet centre, **4**, 92
Pictures: The Golden City of Prague, **4**, 91
Prague's Fine Old Bridge, **4**, 92
The Cathedral founded by King Wenceslas, **4**, 93
When Prague goes Gay, **4**, 94

Prahova. A river of Rumania in whose valley lie important oilfields. The town of Ploesti is the chief centre of these fields, **4**, 102
Picture: **4**, 104

Prairie means meadows or natural grass-land. The prairies of Canada lie south of the forest belt, **3**, 175

Prairie Dog. Wild creature found in America. It is a rodent, about a foot in length and lives in burrows in large colonies.

Prairie Hens, something like large grouse, are birds of North America.

Prairie Provinces in Canada are Manitoba, Saskatchewan and Alberta, **3**, 175

Pratec Hill was a key position in the Battle of Austerlitz (1805). Austerlitz is a town of Czecho-Slovakia.
Picture: **4**, 95

Pratincole is the name of a group of birds of the sandpiper family. Some of the varieties visit our shores and are found where the coast is sandy.

Prawn. Cousin of the lobster; it has five pairs of swimmerets and is nearly transparent, **1**, 234
—what is the difference between a prawn and a shrimp? **1**, 235

Prayer Book. The Church of England services in our own language. First issued in the reign of Edward VI, **2**, 142

Praying insect. Another name for the *Mantis* (*q.v.*).

Preaching Crosses may still be found in many villages. In the time of the Tudors men travelled from place to place preaching.
Picture: **2**, 135

Precession is the term used by scientists to describe the slight "wobble" of the earth as it spins.

Precincts. The land immediately surrounding a building, such as a cathedral or college.

Precious Stones. See *Gem.*

Precipitate. Any matter which, having been dissolved in a liquid, falls at the bottom of the vessel when some other substance is added.
A precipitate is caused by a chemical change; a sediment simply settles by its own weight without anything being added to the liquid.

Preece. Sir William Henry (1834–1913). A Post Office engineer who had much to do with the beginnings of wireless telegraphy.

Prehistoric means something belonging to a period before recorded history. The study of the remains of buildings, animals, etc. which existed in prehistoric times is known as Archæology (*q.v.*), **7**, 1, 297, *et seq.*

Prehistoric animals. The earliest forms of animal life that existed on the earth were the trilobites, after which came the fish, then reptiles, followed by the mammals, **1**, 8 *et seq.*
Colour Plates: **1**, *facing* 36 and 37.
See also under separate names, *Ichthyosaurus*, etc.

Prehistoric Fish. See *Fish, Prehistoric.*

Premier Diamond Mine is in the Transvaal, not far from Pretoria. From it came the Great Cullinan diamond, **3**, 294
Picture: **3**, 283

Pre-Raphaelism in painting refers to a movement begun by a group of Victorian painters, **9**, 340

Presbyterian. Under the government or control of presbyters. The Presbyterian Church of Scotland is the established Church of that country, which for Church purposes is divided up into districts.
In each presbytery, or district, is a council of the same name, the members of which, the presbyters, are the pastors and elected elders.

Prescott. A town on the St. Lawrence river, Canada, about 120 miles above Montreal, **3**, 160

Prescott, William Hickling (1796–1859). An American historian. Though almost blind, he was author of *The Conquest of Mexico* and *The Conquest of Peru.*

Press. A broad comprehensive term used to describe the output of the printing press. It is generally applied to newspapers and weekly or monthly periodicals in such terms as "the daily press," meaning the daily newspapers of all kinds. See *Newspaper.*

Press Association. The leading news agency in Britain, founded in 1868, and now controlled by British provincial papers. It is also in association with Reuters (*q.v.*), **9**, 218

Pressburg. See *Bratislava.*

Press-Gang was the name given to a body of men who forcibly carried out the "impressment" of men held liable for forced service either on land or sea. It was more generally used to secure recruits for the Navy and the system dates back to 1355. Declared illegal in 1641 it continued to be used until 1815, particularly in seaport towns, but has never really been formally disowned or abolished, though an Act of Parliament as late as 1835 limited the service of men so taken to five years, **8**, 9
Picture: The Press-Gang At Work, **8**, 9

Pressure Point is the term used to describe the position where an artery must be firmly compressed to control bleeding, **8**, 236
Pictures: Pressure Points for Control of Bleeding, **8**, 233
Bleeding Arrested by Pressure at a Joint, **8**, 234
Bleeding from the Arm or Hand, **8**, 235
Points, Bandages and Reef Knot, **8**, 237

Prestatyn is a town on the north coast of Flintshire and a popular holiday centre.

Presteigne, on the River Lugg, is the county town of Radnorshire.

Prester John was a mysterious priest and ruler. At first people thought he ruled in Asia, but later versions of his story gave Africa as the continent of his kingdom. Bartholomew Diaz tried to find him without success, but two other Portuguese explorers identified him as the monarch of Abyssinia, **2**, 287
Picture: **2**, 288

Preston is a large town of Lancashire on the Ribble. It is interested in cotton as well as heavy industries, **3**, 109
— a Jacobite army was defeated here in 1715, **2**, 180

Prestonpans. A small town of East Lothian on the Firth of Forth, so called from the pans which were used centuries ago for a local salt industry.
The Battle of Prestonpans was fought here in 1745, **2**, 181

Prestwick is in Scotland, about 30 miles south-west of Glasgow. It is one of the most important airfields in Britain, the starting-point for trans-Atlantic and other services, **3**, 120
Picture: **3**, 122

Pretoria is the capital of the Transvaal and seat of the administrative government of the Union of South Africa, **3**, 294; **4**, 383
—the treaty ending the South African War was signed here in 1902, **2**, 225
Pictures: In a Valley of Diamonds, **3**, 283
Union Buildings, Pretoria, **3**, 285

Pretoria Castle is a 28,700 ton ship of the Union Castle Line, which carries the South African mail.
Phototone Supplement: Ships Today and Yesterday, **5**, *between* 272 and 273

Prickly Pear. A variety of American cactus, **1**, 335
Picture: **1**, 353

Priddy, a village in Somerset where the stream which reappears in the famous Wookey Hole (*q.v.*) disappears below ground, **3**, 58

Priestley, John Boynton (born 1894). Brilliant modern novelist and poet, author of *Good Companions* and other novels, and of several successful plays, including *Time and the Conways, They Came to a City* and *The Linden Tree*, **7**, 262
Picture: **7**, 263

Priestley, Joseph (1733–1804). Son of a Leeds clothworker, he became interested in the action of heat. He made several important scientific discoveries, **6**, 319; **7**, 358
Picture: **7**, 359

Primary means first in order, importance, or time; original. Food, water, clothing and shelter are primary needs, that is, things of the first importance to us.

Primary Colours of the spectrum are red, green and violet-blue. By mixing lights of these colours the other

colours of the spectrum can be produced.
In painting the primary colours are red, yellow and blue.

Primate of All England is a title bestowed upon the Archbishop of Canterbury, **3**, 34

Primate of England is a title bestowed upon the Archbishop of York.

Prime Minister, or Premier, is the head of Government in Gt. Britain and in many other countries. The first English Prime Minister is generally considered to have been Sir Robert Walpole (*q.v.*) dating from 1721-42. Since 1902 the Prime Minister has always been a member of the Commons. In recent times the salary of the Prime Minister has been fixed at £10,000 p.a. His official residence is 10, Downing Street (*q.v.*) and he also has a country retreat, Chequers (*q.v.*), **9**, 56.
Walpole, first Prime Minister, **2**, 180
Picture: Chequers, **10**, 303

Prime Rose. Old-fashioned name for primrose, **1**, 301

Primrose. This well-known flower is a member of the Primula family, to which the Polyanthus also belongs. The primrose grows wild, but is also cultivated in our gardens.
Picture: **1**, 299
Special Colour Supplement: British Wild Flowers, **1**, *between* 304 and 305 (Plate 1).

Primula. Name of a large plant family of which primroses and polyanthuses are members.
—the greenhouse variety *P. obconica* has hairy leaves, the hairs being an irritant, **1**, 345

Prince Charles Edward (1720–88) was the Stuart who came to be known as the Young Pretender. He attempted to win back the throne of his ancestors but was defeated at Culloden, 1746, **2**, 181, 408
Pictures: The Hanoverians versus the Stuarts, **2**, 179
Rebel Hunting after Culloden, **2**, 183
The Battlefield of Culloden, **3**, 126
Where the Clansmen Gathered, **3**, 127

Prince Charles of Edinburgh is the son of Queen Elizabeth II and the Duke of Edinburgh. He was born on 14th November, 1948, and was baptised on 15th December, 1948, receiving the names Charles Philip Arthur George, **2**, 266, 415
Picture: **2**, 261

Prince Consort was the title given in 1857 to Albert, son of the Duke of Saxe-Coburg-Gotha, who married Queen Victoria in 1840. An able, highly educated man he became the Queen's most trusted counsellor until his death in 1861. He was the prime mover in the organisation of the Great Exhibition, held in the newly-erected Crystal Palace in Hyde Park in 1851. Art schools and public picture galleries owed much to the support he gave in the early stages of their development throughout the country, **2**, 216
Pictures: The Royal Family in 1848, **2**, 213
The Great Exhibition, **2**, 214

Prince Edward Island is a province of Canada, in the Gulf of St. Lawrence. It has important fox fur ranches, some of which may have as many as 3,000 animals on them, **3**, 165
—oil wells, **3**, 196

Prince Geraint and the Sparrow-Hawk. A Tale of King Arthur and the Round Table, **5**, 392

Prince of Wales is the title bestowed upon the eldest son of a British Sovereign.
—King Edward VII was created Prince of Wales when only a month old, **2**, 223

Prince of Wales. A British battleship sunk by the Japanese in the Second World War, **2**, 252

Prince of Wales College is at Achimota on the Gold Coast. It is a training centre for Africans, **3**, 381

Prince of Wales's Feathers is the name given to one of the geysers or natural hot springs of New Zealand, **3**, 260

Princep, Gavrilo. An Austrian subject of Serbian nationality who, for political reasons, assassinated the heir to the Austro-Hungarian throne (1914), **2**, 233

Prince Regent. See *George IV.*

Prince Rupert is a town and fishing port of British Columbia, Canada. A Pacific terminal of Canadian National Railways, it is a great wheat centre, **3**, 178

Princes Risborough is a town of Buckinghamshire and a centre of chair-making.

Princess Anne is the daughter of Queen Elizabeth II and the Duke of Edinburgh. She was born August 15th, 1950, and christened Anne Elizabeth Alice Louise, **2**, 266
Picture: **2**, 261

Princess Coronation. A class of modern railway engines used mainly on the England-Scotland service.
Special Colour Supplement: Railway Engines: Plate 2 Modern British, **5**, *between* 128 and 129

Princess Royal. Victoria Alexandra Alice Mary, only daughter of King George V, born 1897, married in 1922 the 6th Earl of Harewood who died in 1947, and was succeeded by their elder son, George Henry Hubert Lascelles, now the 7th Earl of Harewood (*q.v.*)

Prince Street is one of the main thoroughfares of Colombo, the chief city of Ceylon, **3**, 363

Princes Street is the pride of Edinburgh and is classed as one of the finest thoroughfares in the world, **3**, 116
Picture: **3**, 117

Princeton is a famous university in the State of New Jersey, U.S.A.
Picture: **4**, 281

Principality. A territory ruled by a prince; one which gives a prince his title. When "the Principality" is spoken of among us, Wales is meant.

Principia is the name of a famous work by Sir Isaac Newton. In it he suggested that comets revolve round the sun as do the planets, **8**, 166

Printer's Ink is made from lamp black ground with oil and varnish.

Printing. One of the most important inventions in the history of the world was the printing press. Probably the first press set up in Europe was that of John Gutenberg at Mainz, Germany, in 1450-4. Improvements followed, including the invention of cast type. The first printing press in England was set up by William Caxton (*q.v.*) at Westminster in 1476-7. His press was continued after his death by his foreman, Wynkyn de Worde.
Until towards the end of the last century the type was hand-set, but the invention of the Linotype in America brought another revolution in printing. It was introduced into England about 1889 while the Monotype was first used in this country about 1901.
—the first press set up in England, **2**, 134, 137
—who invented printing? **9**, 391
See *Making a Daily Newspaper*, **9**, 205 *et seq.*
Pictures. Caxton Showing Proofs to Edward IV, **2**, 137
Linotype and Its Operator, **9**, 213
In the Linotype Room, **9**, 214
Making a Stereo, **9**, 215
Ready for the Run, **9**, 216
From Printing Press to the Public, **9**, 217
Printed and Folded, **9**, 218
Photo-tone Supplement: How this Book was Built, **6**, *between* 176 and 177

Pripet. Name of an important river of Poland and the Soviet Union. It is a tributary of the Dnieper.

Prism. A solid body with parallel, flat ends of the same shape and size, and square-cornered sides. The sides may be of any number.

Privateer. An armed vessel owned privately but furnished with Letters of Marque which empowered it to attack ships belonging to any country with which the privateer's country was at war. They were often little different from pirates but frequently had support from high personages in their own country, **8**, 53

Privet is a popular evergreen shrub much used for hedging purposes; green and golden sorts, **1**, 305
—The berries and leaves are poisonous, **8**, 244

Proboscis. The horny tube issuing from the mouths of insects, used for sucking up juices from plants, or blood from animals; an elephant's trunk.

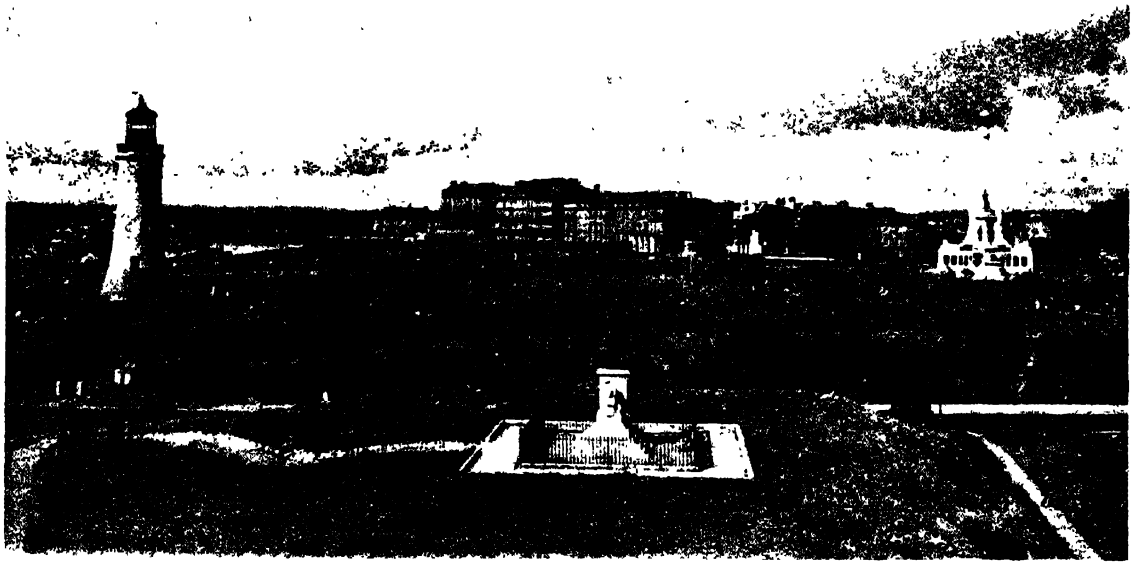
Proctor, Richard Anthony (1837-88). A brilliant astronomer, he determined the rotation period of Mars and closely studied the stars forming the Milky Way.

Procyon is the name of a star ten and a half light-years distant from the earth, **8**, 170

Professional means belonging to or following a profession. A professional golfer makes golf his profession and means of livelihood; an amateur golfer plays the game merely as a recreation.
Professional men are those whose occupations are not concerned directly with trade, agriculture, manufacture or manual work, such as clergymen, doctors, architects, solicitors and so on.

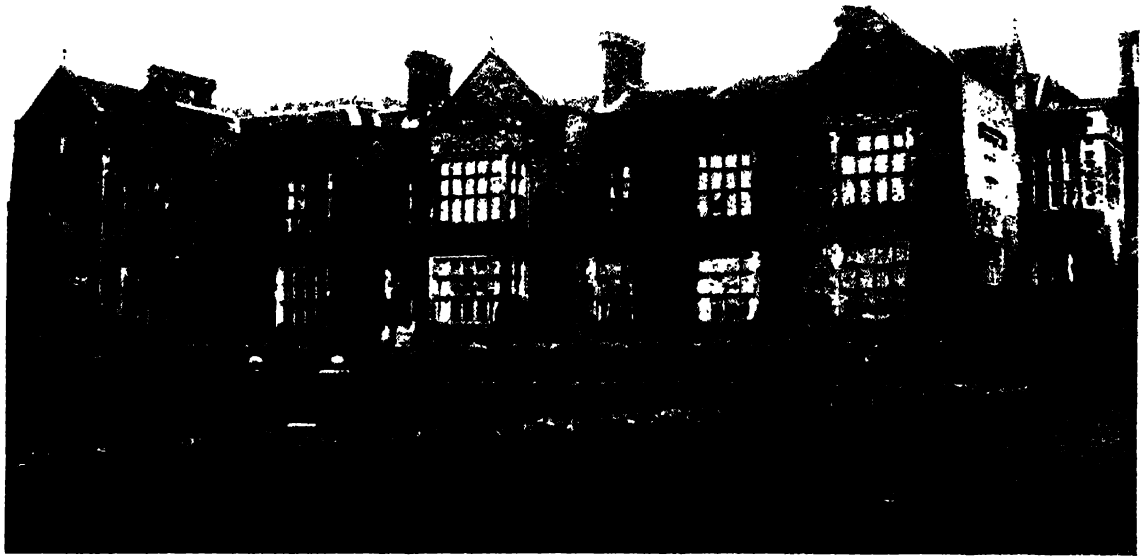
Promenade des Anglais is a famous stretch of the sea front at Nice on the French Riviera. It was called the English promenade because it was

LINKS WITH PAST HISTORY



Modern Portraits Ltd.

"Drake he's in his hammock an' a thousand miles away. . . An' dreamin' arl the time o' Plymouth Hoe" Here is the famous Hoe, with the Smeaton Tower, part of the old Eddystone Lighthouse, as it is to-day Sir Francis Drake was Mayor of *Plymouth* (see p. 295) in 1585, and from this harbour sailed the Pilgrim Fathers in the *Mayflower* in 1620.



Central Press.

A fine old Tudor mansion near Princes Risborough in the Chiltern Hills. Chequers is the country seat of the *Prime Minister* (see p. 302) during his tenure of office At one time the estate was owned by a grandson of Oliver Cromwell, and portraits as well as swords of the Lord Protector are preserved here. The estate was presented to the nation by Lord Lee of Fareham in 1917.

built, in 1821, as a result of subscriptions contributed by the English residents there who wished to do something to provide work for the unemployed.
Picture: **4**, 138

Prometheus appears in the myths of ancient Greece. He stole fire from heaven to give to man, **5**, 85

Prominences is the name given by astronomers to rose-coloured flames seen round the edge of the moon during a solar eclipse, **8**, 125
Picture: **8**, 130
Colour Plate: Flaming Outbursts from the Sun, **8**, *facing* 161

Promontory. A high point of rock or land projecting into the sea. Gibraltar is a bold promontory at the southern end of Spain.

Propeller is the name given to the revolving, bladed part that drives ships, aircraft, etc. A ship's propeller is often called a "screw."
Pictures: **5**, 280; **6**, 119

Proper Motion is the term used by astronomers to describe the movement of the stars in space as distinct from the *apparent* motion of the stars across the sky each night. Even the sun has a proper motion, **8**, 176

Prophecy means a foretelling. Note the difference in spelling between the noun and the verb to prophesy.

Proportional Representation. A proposed method of voting at public elections designed to correct defects in our present voting system. Until recently this method was in use in the election of Members of Parliament to represent the Universities, **9**, 54

Prose, from the Latin word which means straightforward, is the term used for ordinary written words without any attempt to make poetry. The first English prose was written by the Venerable Bede in the seventh century, **9**, 337

Protectorate (1653–58) is the name given in English history to the period during which England was ruled by Oliver Cromwell and ended with the death of Cromwell, **2**, 165
—the term is also used where a Great Power exercises a direct or indirect control over a smaller one. British Protectorates include Aden, Bechuanaland, Kenya, Nyasaland, Uganda, Zanzibar.

Proteins is the name given to all foods that help to build up our bodies, **8**, 220

Pro tem. means *pro tempore, i.e.*, for the time being.

Protestants. This was originally the name given to the followers of Martin Luther, the sixteenth century religious reformer, because they protested against abuses in the Roman Catholic Church, **2**, 142

Proteus. Name of an old man in the Greek Legends. He looked after the seals of Poseidon, king of the oceans, **6**, 139

Proteus. Name of a sightless amphibian animal about a foot in length. It is found in waters under the earth in certain parts of Europe.

Protoplasm is the name given to the substances of which the cells of our bodies are composed, **8**, 226

Proverbs are pithy sentences containing worldly wisdom in a concentrated form.

Provender. Hay, straw, corn and other dry food for cattle and horses.

Providence, a seaport and commercial centre, is capital of the State of Rhode Island, U.S.A. The first settlement was made there by Roger Williams in 1636.

Prox. means *proximo, i.e.*, the next. In a letter written in January, a reference to the 3rd prox., would mean the 3rd of the February following.

Prunes are the dried fruit of special varieties of plum grown in parts of Europe and in America.

Prussia. This was the name of a State of Germany which was dissolved and its territory redivided by the Allies of the Second World War in 1946. Previously it was the most influential of the German States with a strong military tradition dating from the days of the eighteenth century kingdom of Prussia which rose to power over all Germany and in 1871 gave Germany its Emperors, **4**, 75 *et seq.*

Prussic Acid. Name of a deadly poison. It is found in laurel leaves, peach kernels and apple pips, **1**, 350

P.S. means *post scriptum* an afterthought, something added after you have completed a letter, **8**, 188

Psaltery. An ancient stringed instrument often mentioned in the Bible; although it cannot be said with certainty what particular form of the instrument is referred to there. In medieval times it was a shallow box, triangular or rectangular in shape, over which strings were stretched which were played with the fingers. It may be looked upon as the ancestor of the harpsichord and the spinet. See *Musical Instruments.*

Psalms. A Book of the Old Testament containing some 150 poems which are mainly songs of praise. The author of many of the Psalms is believed to be David but no definite proof exists.

Pseudacacia. See *False Acacia.*

Pseudonym, a name taken by a writer to conceal his identity. Some examples are: "Mark Twain" (Samuel L. Clemens); "George Eliot" (Marian Evans).

Psittacus. Family name for a large group of birds mostly of the parrot type. Two of the toes on each foot are turned back and the other two in a forward direction.

Psyche (*pron.* si-kee). In classical mythology she was a beautiful maiden who was the representation of the human soul. Cupid fell in love with her and eventually they were united. The famous Roman author, Lucius Apuleius (second century A.D.) tells the story in his *Golden Ass.*

Psychology is the science which studies the working of the mind. It deals with sensations, emotions, memories, thoughts and ideas. The body, which includes the brain, is purely physical, but the mind is something different. The subject is dealt with in *How the Brain and the Mind Work*, in which the brain and the mind are treated separately. The work of the psychologist comes under the heading "How the Human Mind Works," **6**, 408

Ptah (*pron.* tah). One of the early Egyptian gods; he was the divine potter and artificer who had created all things from the Nile mud.

Ptarmigan. A bird belonging to the grouse family; it makes its home largely in Scotland, **1**, 191

Pteranodon. An extinct winged animal.
Colour Plate: Animals of Prehistoric Times, **1**, *facing* 36

Pterichtys. A small prehistoric fish whose body was encased in armour.
Picture: **1**, 14

Pterodactyl. A prehistoric flying lizard, in appearance like a giant bat, **1**, 24; **9**, 362
Picture. **1**, 21

P.T.O. means Please Turn Over.

Ptolemaeus is the name of one of the craters on the moon 115 miles across, **8**, 138

Ptolemaic System was the name given to the conception of the universe and heavenly bodies put forward by Ptolemy, **8**, 107

Ptolemy, Claudius (second century, A.D.). An Egyptian astronomer and geographer whose maps were commonly used for thirteen centuries after his death. He wrote eight books on geography. The Ptolemaic system assumed that the Earth was the fixed centre of the Universe, with the sun, moon and stars revolving round it. Copernicus disproved this in 1453, **4**, 215, **8**, 107

Ptolemy, Soter (367–283 B.C.) was one of Alexander the Great's generals. He founded a new kingdom of Egypt about 323 B.C. and his line ruled there until about 30 B.C., **2**, 402

Ptolemy XIII was father of the Egyptian Queen Cleopatra.

Public Services. See *Services we Maintain for the Common Good.*

Puccini, Giacomo (1858–1924). Famous Italian musical composer, he wrote "La Boheme," "La Tosca" and "Madame Butterfly," **7**, 184
Picture: **7**, 182

Pudding Lane, near London Bridge, was where the Great Fire of 1666 began, **2**, 169
Picture: **3**, 26

Pueblos are the communal houses of clay in which Indians live in California, **4**, 292
Picture: **4**, 296
Pictorial Map: **4**, 290

Puente Del Inca is a town of the Andes and a centre for climbers and hunters of guanaco, **4**, 321

Puente de Occidente is a bridge across the River Cauca in Colombia.
Picture: **4**, 334

Puerto Limon is the chief port of Costa Rica. It stands on the site of an Indian village where Columbus landed on his last voyage to the New World, **4**, 305

Puerto-Rico is an island of the West Indies and a territory of the U.S.A. San Juan is its chief town. Chief products include sugar, molasses, tobacco and rum. It was once a Spanish possession, and Spanish is still widely spoken although English is the official tongue, **4**, 296
Picture: **4**, 295

Puerto Valdivia is a town of South

America on the Western Trunk Highway.
Picture: **4**, 334

Puff Adder. A snake belonging to the family of African vipers.

Puff-Balls are forms of fungi. They may be larger than a man's head, **1**, 359, 360
Picture: **1**, 360

Puff-Ball, Giant. See *Giant Puff-Ball.*

Puffin. A bird of the northern seas; it has a parrot-like beak and white breast, nesting in holes in the cliffs, **1**, 194
Picture: **1**, 195

Puffing Billy. Name of a famous locomotive engine built by William Hedley in 1813.
Special Colour Supplement: Railway Engines, **5**, *between* 128 and 129 (Plate 1).

Puja is the word used in India to describe worship on the banks of the sacred Ganges, **3**, 359

Pulborough is a small town of Sussex, on the River Arun.

Pullet means a young hen, **8**, 317

Pulp Cane is a material used in basket making. It is available in different sizes, **8**, 391

Pulse. The normal pulse rate in adults is about 72 beats to the minute. You can feel the heart-beat in the pulse at the wrist by placing your finger tips at the base of the thumb in front, **8**, 232

Puma, sometimes known as the "Mountain Lion." Member of the cat family. Found in nearly all parts of the American Continent, **1**, 54
Picture. **1**, 52

Pumice Stone is a light and very porous rock thrown out of volcanoes, **9**, 317

Punctuation is the act or art of dividing sentences with stops or marks in order to make the meaning clearer. The most usual punctuation marks are the comma, semi-colon, colon, period or full stop, inverted commas or quotation marks, question mark, exclamation mark and apostrophe. Although punctuation is of great importance and there are certain hard-and-fast rules which must be observed, there is room for differences of opinion, for instance as to exactly when the comma should be used. The over-riding consideration is, of course, the clearness of the meaning, **8**, 202 *et seq.*

Pundit. A word used in India to describe a learned person, especially when his learning is concerned with religion, **3**, 358

Punic Wars. This is the name given to the great wars which ancient Rome fought against Carthage, her rival in the Mediterranean. The First Punic War (264–241 B.C.) won Sicily for Rome, but did not bring a decision. The Second Punic War (218–201 B.C.) in which Hannibal came near to defeating Rome, ended with the defeat of the Carthaginians who became the vassals of Rome. But many years later, Rome's fear of Carthage remained, and she attacked and destroyed that great city, making Carthaginian Africa a province of the Roman Empire, **2**, 402.

Punjab. A former province of India which has now been split in two—East Punjab (capital, Simla), which belongs to the Union of India; and West Punjab (capital, Lahore), which is a province of the Dominion of Pakistan.
In both, agriculture is the chief industry—grain, cotton, and oil-seed being produced.

Punta Arenas is the most southerly town in Chile, and stands on the Straits of Magellan. Wool and mutton are exported from here. Its alternative name is Magallanes, **2**, 366

Pupa. Name given to an insect that has passed the grub or caterpillar stage but has not become winged. Plural. Pupæ, **1**, 239

Puppy. A young dog. How to feed, train and bring one up, **8**, 316

Purcell, Henry (1659–95). He occupies a leading place among the musical geniuses of English birth. Became organist of Westminster Abbey in 1680 and is remembered as a composer of great originality and beauty, **7**, 158
Picture: **7**, 159

Purl, in a knitting sense, means inverted stitches, **8**, 396

Puritan. One who favoured a simpler form of worship and faith than that of the Church. The Puritans, who first appeared in Queen Elizabeth's reign, multiplied their numbers until, in the time of Charles I, they were a formidable body of "dissenters."
Many of them left the country and settled in America. The part they colonised was known as New England and included the states now known as Maine, New Hampshire, Vermont, Massachusetts, Rhode Island and Connecticut, **2**, 158
Photo-tone Supplement: Sailing for life in a new Land, **8**, *between* 368 and 369

Purple is a colour midway between violet and crimson.

Purple Emperor. A rare variety of butterfly, **8**, 281
Special Colour Supplement: British Butterflies, **8**, *between* 288 and 289

Purple Loosestrife. A bold plant, 3 ft. or more in height which grows in masses. The stems have many branches and the reddish flowers grow in circles round the stems. Not to be confused with the willow-herb.

Purple Orchis. A wild plant flowering in spring and bearing spikes of purple blooms. It grows from tubers.

Pusan. See *Fusan.*

Pushkin, Alexander Sergèyevich (1799–1837). A Russian poet and novelist, he was born at Moscow and was exiled several times for his views. His best-known work is *Boris Godunov*, **7**, 186

Pushtu is the language spoken by the Pathan people. It is the official tongue of Afghanistan, but Turki and Persian are also spoken in this country, **3**, 340

Puss. Term applied to the domestic pet. It has come down to us from the Egyptian word for cat, **1**, 57

Puszta is the name given to the plains of Hungary. These plains are like the prairies of Canada, **4**, 93
Pictures: The Hortobagy Plain, **4**, 3
A Son of the Puszta, **4**, 103

Putney, Surrey, is a residential suburb of Greater London standing on the River Thames. It is the starting point of the Oxford and Cambridge Boat Race.

Puy is the name given in France to the cone of a prehistoric volcano such as those found on the Auvergne Plateau, **4**, 13

P.V.C. is an abbreviation of the chemical name *Polyvinyl Chloride*, a plastic material with properties similar to india rubber, **6**, 376

Pwllheli, on Tremadoc Bay, is a holiday resort of Carnarvonshire, **3**, 108

Pygmalion. In Greek mythology a King of Cyprus who made a statue in ivory of a beautiful maiden. He fell in love with it and the goddess Aphrodite breathed life into the statue and Pygmalion married her

Pylon Avenue, formed of great snow-heaps, marked a route for Sir Ernest Shackleton in the Antarctic.
Picture: **2**, 374

Pym, John (1584-1643). English Statesman, one of the members of Parliament whom Charles I tried to arrest. He played a leading part in the proceedings against Strafford and Laud, **2**, 161

Pyramid. A solid body standing on a base with three, four or more sides and tapering to a point at the top. The Egyptian Pyramids were built as tombs for kings.
The Great Pyramid of Cheops is the largest stone structure in the world, **2**, 401; **5**, 115; **7**, 283; **9**, 8
Pictures: The Pyramids of Gizeh, **2**, 402; **4**, 195

Pyrenees. Name of a mountain range between France and Spain. The chain extends from the Bay of Biscay to the Mediterranean, a distance of about 250 miles, **4**, 134, 167, 352
Hannibal crosses the Pyrenees, **2**, 65
Picture: **4**, 167

Pyrethrum. A plant whose flowers yield a dust that is fatal to insects. It is one of the main crops in Kenya Colony, **3**, 372

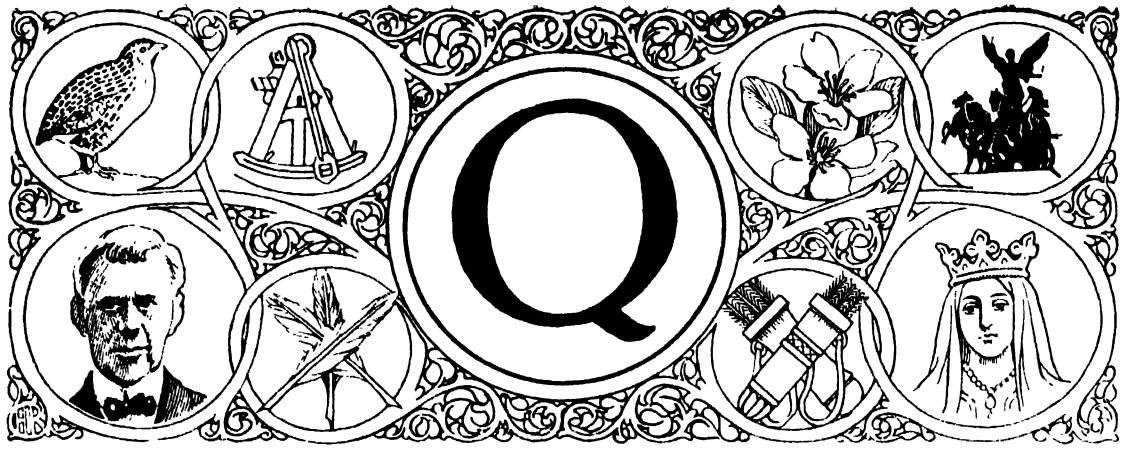
Pyrites. A natural compound of sulphur and a metal; a natural sulphide. The most common form is iron pyrites, which has a golden or brassy colour and has often been mistaken for gold in rock.
Another variety is copper pyrites, a combination of sulphur, copper and iron, **4**, 356; **6**, 44

Pyrotechny is the art of making fireworks (*q.v.*).

Pyrrhus (third century B.C.) was the King of Epirus whose army defeated the Romans in 279 B.C. So costly was his victory that today any victory costing too much is described as "Pyrrhic," **2**, 402

Pythagoras (*c.* 570–500 B.C.). A famous Greek philosopher who was also an astronomer. He pointed out that the morning and evening appearances of a star were due not to two planets, but to different positions of the same planet in its orbit, **7**, 326

Python. A large snake, 15 ft. and more in length, related to the boas. The young are hatched from eggs, **1**, 141
Picture: **1**, 142



Q is the seventeenth letter of our alphabet. The early Greeks had a symbol for it, but the later Greeks dropped it. The Romans, however, took it into their alphabet and handed it down to us. We could do without this letter it is not found in Anglo-Saxon as its sound could be represented equally well by KW. The English Q is always followed by U, as in Latin and languages derived from it, with certain exceptions when a final Q is used and is then sounded like K. In Arabic Q is used without U, as in Iraq, and sounded like a throaty K. On the whole Q is little used, as the examination of a page of type will prove.

The letter appears in the abbreviations Q.C. (Queen's Counsel), and Q.E.D. (quod erat demonstrandum—which was to be proved).

"Q." was the pen-name of *Sir Arthur Quiller Couch* (*q.v.*)

Qa'aiti and Kathiri is the family of the rulers of that part of Arabia known as the Hadhramaut, **4**, 205

Q.A.I.M.N.S. Abbreviation for Queen Alexandra's Imperial Military Nursing Service, founded in 1902 and now known as Queen Alexandra's Royal Army Nursing Corps. *Abbrev.* Q.A.R.A.N.C.

Special Colour Supplement: British Uniforms, **9**, *between* 384 and 385 (Plate 4)

Q-boat. A vessel specially prepared to look like a harmless, unarmed merchant ship but was actually a fully-armed fighting-ship. Such vessels were employed successfully in the war of 1914–18 to combat the German submarine menace, **8**, 12

q.e. means *quod est, i.e.*, which is.

Q.M.G. means Quarter-Master-General, a General who is responsible for all supplies to the Army.

qt. means quart, the measure of a liquid.

Qto. means *quarto*. Strictly, a sheet of paper folded in quarters, or in four. Sometimes, 4to.

Quack. Name given in North America to the weed Couch Grass, **1**, 337

Quack. One who pretends to have skill or knowledge which he does not possess.

Quadrant. An instrument formerly used by navigators for taking angles to ascertain the position of a vessel at sea. It was superseded by the sextant. (*p.h.*)

Quadrangle. A square court surrounded by buildings; an open, square-cornered space bounded by the buildings of a college or hospital, or other institution.

Quadriga was the name given by the Romans to a chariot drawn by four horses. (*p.h.*)

Quadrille is the name of a dance. It is danced by four couples who take up their position in the form of a square.

Quadruplex means fourfold. In telegraphy it applies to a system which enables four messages to be sent at the same time through a single wire, two in each direction.

A steam-engine is said to have quadruplex expansion if its cylinders expand the steam in four stages.

Quagga. An animal of the zebra type that once roamed the northern parts of Cape Province. It has been extinct about 80 years, **1**, 94

Picture: **1**, 95

Quai D'orsay (*pron.* kay dorsay), a quay on the south bank of the Seine, at Paris. Here stand the buildings of the French Foreign Office.

It corresponds to our Downing Street.

Quail. The smallest member of the partridge family and is a variable visitor to this country. It is highly valued as food and large numbers are netted in Mediterranean countries especially during the Spring migration. It is mentioned in the Bible. (*p.h.*)

Quakers is the name given to members of the religious body whose correct name is the Society of Friends. It was first applied to the Society's founder, George Fox, in 1650, **2**, 171; **9**, 326

Quaking Grass. Name often applied to the wild grass *Briza* (*q.v.*).

Quantity Surveyor. A person who draws up an estimate from architects' plans of the amounts of material required in the construction of a building, including their price and the cost of labour in using them.

Quantock Hills. Heights of Somerset, they begin on the Bristol Channel near Watchet and extend in a south-easterly direction. The highest point is Wills Neck, 1,262 ft

Quarantine means literally a period of forty days during which a ship used to be detained in port, with all the inmates confined to the ship, if she arrived with cases of infectious illness on board. In this country putting ships in quarantine has been practically abolished since every ship arriving is now boarded by a medical officer of health.

Dogs reaching this country must be in quarantine under official supervision for a long period before being released

Quarry. A place from which stone, marble or slate is obtained in large quantities. It may have the form of a large open pit, or be merely a cut made into a mountain-side or cliff. Men quarry the material by blasting it loose with explosives or detaching it with wedges and bars

Quart. A British measure for liquids. It is the fourth part of a gallon.

Quarter may mean the fourth part of a given measure, *i.e.*, 4 oz. = ¼ lb. The four quarters of a compass are its principal points.

To give quarter, in a military sense, means to show mercy on an enemy.

Quarter Days may be said to mark the four quarters of the year. In England, the days are: March 25th (Lady Day) June 24th (Midsummer Day),, September 29th (Michaelmas Day), and December 25th (Christmas Day).

In Scotland quarter days are: February 2nd, May 15th, August 1st and November 11th.

Quarter Deck. A deck, or part of a deck, at the stern of a ship. It was originally raised above the main deck. On warships the quarter deck is reserved for captain and officers and is saluted by anyone entering it. This arises from the fact that at one time a Crucifix stood on the quarter deck.

Quartering is a term used in the timber

trade. It applies to square pieces of wood of any length.
The term is also used in Heraldry (*q.v.*).

Quartermaster. A petty officer on a steamship or war vessel whose duties are to steer, look after the chart-room, and keep the bridge instruments in good condition. A large ship carries at least four quartermasters.
A military quartermaster attends to the supply of food, ammunition and other necessaries for the men of a battalion or regiment.

Quartern. An old-English measure. We use it today chiefly with reference to the quartern loaf of bread, *i.e.*, a loaf of 4 lb.

Quarter Sessions are courts of law in which are tried cases not so serious as those which go before the Assize Courts. A certain number of County magistrates (J.P.s) under the chairmanship of one of the most experienced sit on the Bench. In the cities there is only one judge, known as a Recorder, who is a barrister of wide experience, **9**, 71

Quarter-Staff. An old-English weapon about 6½ ft. long and generally loaded with iron at both ends. It was held in the middle, and was a most excellent weapon both for offence and defence.

Quartet. A musical piece written for four instruments or for four voices.

Quarto is the term applied to a book having leaves one quarter the size of a sheet of printing paper.
The measurements of such a book depend, of course, on the particular size of sheet used, but in any case would not exceed about 15 in. by 11 in. In catalogues the word appears as 4to, **9**, 392

Quartz is a mineral used in the manufacture of cheap jewellery, radio sets and telephones, **4**, 356.

Quassia is the bitter wood of a tropical tree. The extract is used as a tonic and as an insecticide for plants.

Quatre Bras. Name of a village in Belgium associated in history with the battle of that name (June 16th, 1815) which led up to Waterloo, **2**, 206
Pictures: From Quatre Bras to Waterloo, **2**, 201
At Quatre Bras, **2**, 203.

Quay (*pron.* kee) is the name given to a level expanse beside a dock, river or the sea at which ships may be moored for the discharge of passengers and cargo or for taking them on board. Quays usually have railway lines laid along them and are equipped with cranes of various types. If all the quays of the London docks could be placed end to end they would extend for 45 miles.

Quebec is an eastern province of Canada, the St. Lawrence being its most important river. It is bounded on the north east by Labrador and on the south-west by Ontario. Water-power is one of its major natural resources. It has wide timber, agricultural, and fruit-growing interests. Its mineral wealth includes asbestos. Montreal and Quebec are the chief towns of the province, 3, 183

Quebec, capital of the Province, stands on the St. Lawrence River. Its population numbers 165,000. It was captured by the British under Wolfe in 1759, **2**, 186, 244, 294; **3**, 157
– founded by De Champlain, **2**, 407; **3**, 155
– Captain James Cook at the siege of Quebec, **2**, 310
— a meeting place for Allied war leaders, **2**, 255
– its rich asbestos deposits, **3**, 196
Pictures: Storming the Heights of Abraham, **2**, 188
Death of Wolfe, **2**, 189
Great Leaders Meet, **2**, 253
Wolfe's Headquarters, **3**, 161
Turning Trees into Newspapers, **3**, 170
In Quebec's Parliament, **9**, 46
Photo-tone Supplement: The Dominion of Canada, **3**, *between* 160 and 161
Bridges Big and Little, **5**, *between* 64 and 65

Queen. A woman sovereign or ruler. A queen consort is the wife of a king; a queen dowager the widow of a king. (*p.h.*)

Queen Alexandra Range. These heights, reaching to between 6,000 ft. and 12,000 ft. above sea level, stand on the shore of the Ross Sea in Antarctica, about half way between Mount Erebus and the South Pole.
Pictorial Map **2**, 367

Queen Anne's Bounty. Name of a fund dating from 1704 and started by Queen Anne to add to the incomes of poorly-paid clergy. In 1948 the Bounty was amalgamated with the Ecclesiastical Commissioners and the assets are now administered by the Church Commissioners.

Queen Anne's Mansions, Westminster, rising 180 ft. above the pavement, form London's highest block of flats, **7**, 335

Queen Bee. The one insect in a hive of honey bees that lays eggs. This she does all her life, **1**, 259
Picture **1**, 264

Queen Beech. Famous tree 135 ft. high that once stood in Ashridge Park, Hertfordshire, **1**, 331

Queenborough is a port and town of Kent, in the Isle of Sheppey.

Queen Charlotte Islands lie off the coast of British Columbia. They form a well-known fishing centre.

Queen Elizabeth, belonging to the Cunard White Star Company, is the biggest ship in the world. She has a tonnage of 85,000, **5**, 260
Picture: An English "Queen" at New York, **4**, 271
Colour Plate. The *Queen Elizabeth*, Largest Ship in the World, **5**, *facing* 256

Queen Maud's Range is the name of a chain of mountains in the Antarctic, **2**, 376

Queen Mary. See *Mary, Queen.*

Queen Mary. Name of the Cunard White Star 81,000-ton ocean liner. She held the record for the Atlantic crossing from 1938 to 1952, **5**, 260; **8**, 46, 63
Picture: On Board the *Queen Mary*, **5**, 253
Photo-tone Supplement: Ships Today and Yesterday, **5**, *between* 272 and 273

Queen of the Adriatic is a name often given to the beautiful lagoon city of Venice which stands at the extreme north of the Adriatic Sea, **4**, 150

Queensberry Rules are the rules drawn up in 1866 by the 8th marquis of Queensberry to govern boxing contests. With some modifications these rules still govern the sport.

Queen's College, in the European quarter of Benares, India, is a fine example of Gothic architecture, **3**, 360

Queen's Counsel. The higher rank of Queen's Counsel (Q.C.) is conferred on barristers of eminence. When receiving this honour a barrister is said "to take silk," because he afterwards wears a silk gown instead of the stuff gown of his more junior colleague, **9**, 74

Queen's County, in Eire, is now known as *Leix* (*q.v.*).

Queen's Doll's House, presented to H.M. Queen Mary by famous authors and artists, was first shown at the Wembley Exhibition. It is now at Windsor Castle.

Queensferry. (1) A town of Flintshire, Wales. It has a ferry across the River Dee.
(2) A town and seaport of Lothian, Scotland, situated on the Firth of Forth, at the south end of the Forth Bridge.

Queensland is a State of the Commonwealth of Australia. It breeds sheep and cattle and has considerable mineral wealth. In the coastal regions sugar, bananas, and other tropical crops are grown. Brisbane, the state capital, is linked historically with the old settlement of Moreton Bay, **3**, 204, 226 *et seq.*
– "Food for Britain" scheme, **3**, 210
Pictures. Brisbane, Port and Capital, **3**, 227
Growing Food for Britain, **3**, 207
Queensland's Capital from the Air, **3**, 228
Uncovered by the Tide, **3**, 230
Pictorial Map: **3**, 243

Queen's Prize. The most important prize of the National Rifle Association meeting held at Bisley in July each year. The Queen's Prize was founded by Queen Victoria in 1860 and is of the value of £250, together with the gold medal of the N.R.A. Until 1889 the competition was held at Wimbledon.

Queen's Speech. At the opening of a new Session of Parliament, the Queen makes what is known as the "Queen's Speech" from the Throne in the House of Lords. Members of both Houses attend to hear the speech and the Commons afterwards disperse to their own House to discuss it. The speech is really a statement of the Government's policy, and its proposals for legislation during the coming Session, **9**, 57

Queenston is a town of Ontario, Canada, on the Niagara River, **3**, 192

Queenstown is the old name of Cobh, one of the chief ports of the Republic of Ireland (Eire), **3**, 152

Queen Street is the name of one of the principal thoroughfares in Auckland, New Zealand.
Picture: **3**, 265

Queen Wasp. Starts a new colony of insects in the spring. By the end of the season 80,000 wasps may have been raised from her eggs, 1, 264

Quentin Durward. Title of one of the Waverley Novels, written by Sir Walter Scott. It is a romance of France and Flanders in 1468 and a young Scot, Quentin Durward, is the hero of the story.

Que Que. An iron and steel town of Southern Rhodesia, 3, 296

Quesada, who became a mutineer, was one of Ferdinand Magellan's captains, 2, 283

Quetta is the capital of Baluchistan province, a country between Afghanistan and the Arabian Sea. It is in the Dominion of Pakistan.

Quetzal. A bird of Central America, from Guatemala to Panama. It has a wonderfully-coloured plumage: the male bird, about the size of a pigeon, has a carmine breast while the upper tail is a metallic green, some of the feathers projecting at least a foot, and often more beyond the tail proper.
The ancient Mexican chiefs wore these plumes and it was forbidden to kill the bird. The bird forms part of the national arms of Guatemala.

Quezon City is the new capital of the Republic of the Philippines. It is being built to the north-east of Manila which is the present capital and is named after a great national leader.

Quiberon Bay, on the west coast of France facing the Bay of Biscay, gives its name to the naval battle of 1759 when the British under Hawke defeated the French, 2, 184, 189, 409

Quick. Name given to bushes of Hawthorn when used for hedging. A quick-set hedge is one made from quick, 1, 305

Quicksand is a stretch of fine sand, mixed with water and clay or chalk which diminish the friction between the grains of sand so much that the sand has no stability and cannot support the weight of men or animals, 6, 9

Quicksilver. See *Mercury.*

Quill. A word applied to a feather used as a pen by sharpening the hollow end and slightly splitting it. The spines of hedgehogs and porcupines are often called quills. For writing the quill was superseded by the steel pen (*q.v.*). (*p.h.*)

Quiller-Couch, Sir Arthur Thomas (1863-1944). Wrote *Dead Man's Rock* and many other famous novels, most of them set in his native Cornwall. His pen-name was "Q"; from 1912 onwards he was professor of English literature at Cambridge, 7, 246, 271 (*p.h.*)
Picture: 7, 247

Quince. Trees or shrubs of the Pyrus family. After flowering they bear a pear-shaped fruit having a pungent aroma and taste. Used for preserving and for flavouring. (*p.h.*)

Quinine. A medicine useful in malaria and other fevers. Produced from the dried bark of the cinchona tree, 1, 311, 9, 334

Quinquagesima is the Sunday next before the first Sunday in Lent.

Quinquennial means something that takes place every five years. Some insurance companies declare bonuses on their policies quinquennially.

Quinquereme. Ancient type of warship propelled by five banks of oars on either side. It was probably introduced about 400 B.C.

Quintain. A post with an arm at the top, like a letter T. One end of the arm was weighted and the whole beam turned on a pivot.
Knights rode at the quintain on horseback and struck at it with their lances, risking a blow from the other end of the arm.

Quintet is the term used to describe a musical composition for five instruments or five voices.
Many quintets are written for a piano, violin, viola, violoncello and double-bass The word is also used of the players or singers themselves

Quire. Term used as a measure of paper or of newspapers and periodicals. A quire of paper is twenty-four sheets, *i.e.*, the twentieth part of a ream.
In a quire of newspapers there are twenty-seven copies.

Quirinal. One of the seven hills on which Rome was built. On its summit is a palace used as a summer residence by the Kings of Italy.

Quirinus. The name given by the Roman people to Romulus after his death, 2, 50

Quito, is the capital of the Republic of Ecuador. It is a very ancient city and once belonged to the Incas. It is the home of "panama" hats, 4, 330; 9, 314

Quiver was the name given in olden days to the case in which an archer carried the arrows for his bow. (*p.h.*)

Quixote, Don, is the hero of the great novel named after him and written by the Spaniard Miguel de Cervantes Saavedra (1547–1616).
The absurdly romantic character of the Knight has given us the adjective "quixotic."

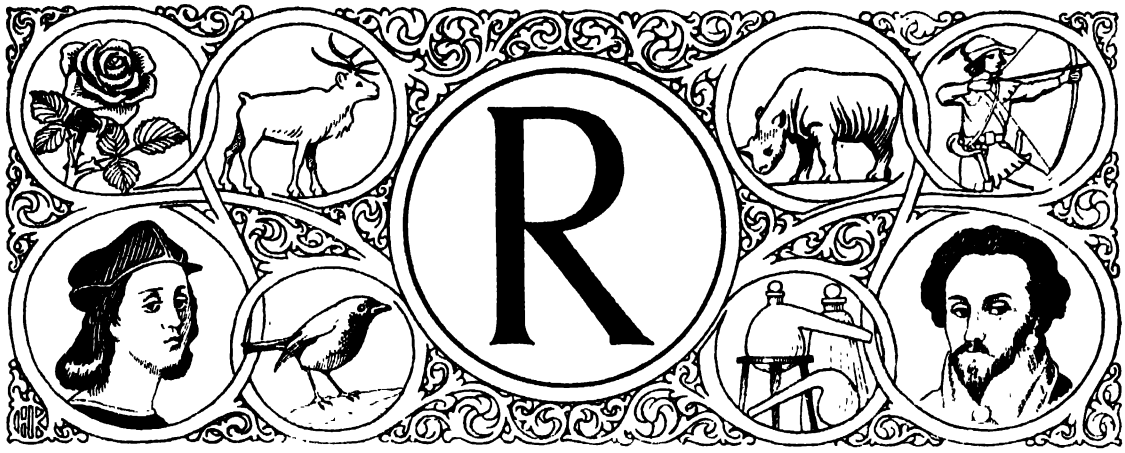
Quoits is a game which dates back in England and Scotland to the fifteenth century. The quoit is a flattened iron ring usually weighing about 9 lb. The object of the game is for the player to throw the quoit over an iron pin.
Variations of the original game are garden quoits in which five pegs are used, and deck quoits in which a single peg on a firm flat base is used.

Quorn, or Quorndon. Name of a Leicestershire village, 9 miles from Leicester and some 2 miles from Loughborough. From it the best-known English hunt has taken its name. It is probable that fox-hunting with hounds began in this district nearly three centuries ago.

Quorum. A term used for the minimum number of persons necessary to form a meeting. Parliaments, councils, committees, public companies and societies usually have a rule stating how many persons must be present to form a quorum before any business can be transacted. In the British House of Commons the quorum is forty and if fewer than that number are present the House is "counted out" and the sitting comes to an end.

Quotient. The answer of a division sum. If 12,550 is divided by 5, the quotient is 2,510.

q.v. means *quod vide,* or which see. For example: an explanation of *post scriptum* is given under **P.S.,** *q.v.*



R is the eighteenth letter of our alphabet. It belongs to the class of liquids. In pronouncing it the tongue is brought near the roof of the mouth, and ordinarily it is a short sound. The Scotch and Irish roll or trill it in a manner which generally shows the nationality of the speaker. In all words derived from the Greek —"rheumatism," "rheostat," "rhinoceros" and "Rhodes" are examples it is followed by H. The letter is used as an abbreviation for River, Railway, Réaumer (a scale for thermometers). Revised (R.V. Revised Version), Royal and Roman (R.C. = Roman Catholic).

R100 and R101. Two famous British airships. The latter was lost in a disaster whilst on the way to Egypt and India, **5**, 187, 221
Picture: R100, **5**, 189

Raasay is an island of the Inner Hebrides, Scotland. It is separated from the Isle of Skye by the Sound of Raasay.

Rabaul is a town on New Britain Island in the Bismarck Archipelago. It was an important Japanese base during the Second World War.

Rabbit. A familiar burrowing animal. It is one of the rodents, **1**, 136
— as a pet. How to house and feed; the various breeds, **8**, 322
— how to hit a rabbit, **8**, 323
— as a pest in Australia, **3**, 232
Pictures: Spoor of the Rabbit, **1**, 124
A Family of Young Rabbits, **1**, 134
Caught with a Carrot, **8**, 318
Rabbits at the Water-hole, **10**, 311

Rabbit-Song. A Poem by Enid Blyton, **9**, 100

Rabelais, François, was a famous French writer noted for the humour of his stories. He was born about 1490 and died in 1553, **4**, 16

Racehorses are slim, graceful creatures capable of great speed. Many of them have Arab blood in their veins
Picture: A Perfect Thoroughbred, **1**, 97

Rachmaninoff, Sergei Vassilievich (1873–1943). A famous Russian pianist and composer. His compositions include operas, orchestral symphonies, piano concertos and pieces. His piano work Prelude in C Sharp Minor is very widely known.

Racine, Jean (1639–99). One of the greatest of French dramatists. *Iphigenie* is classed as his best work and others of high excellence include *Andromaque, Britannicus* and *Mithridate.* He is regarded by the French as their most classic writer, **4**, 8

Racing Yacht, A Model. How to Make. With *Diagrams*, **8**, 357

Rack Railways, with engines having cogwheels and toothed racks between the rails, are used on Snowdon, Pilatus (Switzerland), Pike's Peak, U.S.A., and elsewhere, **5**, 137

Racoon. Name of a small bear-like animal found only in America. It is about 2 ft. in length and has a long tail. Nocturnal in its habits it spends the day in trees. The coati and kinkajou belong to this family.
Picture: (Kinkajou), 10, 201

Radar is a comparatively new word coined to cover the many branches of radiolocation or radio detection and range finding. In Britain Sir Robert Watson-Watt was primarily responsible for the early development of radiolocation. Radar played a very great part in the work of the R.A.F. and the Navy during the war and is equally important in peace, **6**, 210, **7**, 389
Pictures: Valves That Won a Battle, **7**, 389
A Radar Aerial, **7**, 390
A Pupil at the Radar Research Centre, **7**, 408

Radcliffe is one of the cotton towns of Lancashire. It stands on the River Irwell.

Radcliffe Camera, Oxford, was designed by James Gibbs (1737) as an addition to the Bodleian Library and was named after Dr. Radcliffe, founder of the Radcliffe Library. It serves now as a reading room and provides a fine view of Oxford from its roof.
Picture: **3**, 28

Radiator. An apparatus which gives out or radiates heat. The radiator of a motor car gets rid of excess heat in the engine by passing it on to the atmosphere.
In houses we have hot water, steam, gas and electric radiators for heating rooms.

Radio. The transmission and reception of radio or "wireless" waves. Its early history and how our modern radio was developed is told in *The Marvel of Radio*, **6**, 199 *et seq.*
Pictures: Valves Used by Early Experimenters, **6**, 199
The Wizard of Modern Wireless, **6**, 200
How Current Goes Through Valves, **6**, 201
Programmes for Other Lands, **6**, 202
On the Light Programme, **6**, 203
Here is the News, **6**, 204
All Ready for the Concert Broadcast, **6**, 204
The London Home of Broadcasting, **6**, 205
In the Control Room, **6**, 205
At the B.B.C. Transmitting Stations, **6**, 206
Calling All Cars, **6**, 207
Portable Field Equipment, **6**, 207
In a Short-wave Transmitter, **6**, 209
Broadcasts for Children in School, **6**, 210
Big Ben and "Mike," **6**, 211
Wireless in Hospital and School, **6**, 212
From Studio to Picnic Party, **6**, 213
The Sea Lion Makes a Record, **6**, 214
"Walkie-talkie" for Firemen, **10**, 317

Radioactivity is the property possessed by thorium, uranium and their compounds of emitting rays able to pass through opaque substances as well as other remarkable properties.
Recent developments show the possibility of making other substances radioactive and this is likely to lead to big developments in the use of radioactive materials in medicine. Apparatus has been devised, known as the Cyclotron, by means of which the atom is disintegrated and its peculiar properties transmitted so that radioactive materials for biological experiments can be readily prepared, **6**, 210; **7**, 409
Picture: Making Artificial Radium, **7**, 402

Radiolocation. See *Radar.*

Radiotelephony is a system of world

communications of which wireless forms only one vital link, **6**, 288

Radish. An annual vegetable much used in salads.

Radisson, Pierre. A French colonial adventurer who explored the Hudson Bay region of Canada in company with Medart Chouart during the later seventeenth century and brought the knowledge thus acquired to King Charles II of England. The result was the foundation of the Hudson Bay Company, **3**, 156

Radium. A white metal, one of the elements (symbol Ra), which has the remarkable power of sending out continuously rays invisible to the human eye.
It was discovered in 1898 by Mme. Curie and her husband, who separated it from the mineral called pitchblende. Radium is much used in hospitals for treating disease. The rays are of three kinds, called alpha, beta and gamma rays, **7**, 386, 302, 409
Pictures: The First Great Woman Scientist (Mme. Curie), **7**, 386
Making Artificial Radium, **7**, 402

Radnorshire is one of the southern counties of Wales famous for its sheep. Its capital is Presteigne.
Picture. **3**, 104

Radstock, Somerset, is north-east of Wells and is one of the centres of the Somerset coalfield, **3**, 58

Rae, Dr. John (1813–93) found evidence of the fate of Sir John Franklin's expedition (1845) whilst on a sledging expedition from Repulse Bay, **2**, 303

Raeburn Sir Henry (1756–1823). A Scottish artist and portrait painter, **7**, 80
Picture: **7**, 81

R.A.F. means Royal Air Force (*q.v.*).

Raffia is a material prepared in strands. It is obtained from the leaves of some of the palm trees, and is used for making small articles of various kinds. Raffia tape is widely used for tying plants by gardeners.
See *Basketry (Indian)*; *Raffia, Plaited*; *Raffia Winding*.

Raffia, Dyeing. How to obtain pretty raffia for handcrafts by dyeing it with simple materials, **8**, 389

Raffia, Plaited. This makes an interesting handcraft for tiny folk. It may be used for making mats, baskets, dolls' hats and furniture, **8**, 379
Picture: **8**, 379

Raffia Winding is an interesting handcraft for the little folk, **8**, 376
Picture: **8**, 376

Raffles, Sir Thomas Stamford (1781–1826). A great English colonial administrator and the founder of Singapore, **3**, 404

Ragged Robin. A wild flower related to the campions, **1**, 302
Picture: **1**, 302

Ragged Schools were started by Robert Raikes, John Pounds and others at the end of the eighteenth and beginning of the nineteenth centuries. They became day schools under the Education Acts of 1870-72.

Ragnagar is a remote place in Rajputana (*q.v.*), in the north-west of India. Here can be seen a wonderful building of great antiquity.
Picture: **3**, 311

Ragout (*pron.* Rag-oo) was originally a highly seasoned relish served with a savoury dish. It is now the name often given to a seasoned stew of mutton which has been cooked before.

Ragusa. See *Dubrovnik*.

Ragwort. A wild plant with heavily-cut leaves which bears clusters of flowers like small yellow daisies.
Special Colour Supplement: British Wild Flowers, **1**, *between* 304 and 305 (Plate 3)

Raichur is a town of Hyderabad, a State of the Dominion of India, **3**, 323

Rail. Name given to a large family of birds representatives of which are found in most parts of the world. In this country among the rails we have the water-rail, water-hen, coot and corncrake.

Railway Bridges. Many bridges, small and great, have had to be built in the construction of railways, and they are often examples of great engineering skill. Some of the largest are those over the Forth, the St. Lawrence, the Mississippi at St. Louis, and Niagara Falls, **5**, 128

Railway Nationalisation. On 1st January, 1948, the railways in Great Britain passed under the ownership of the State. They are now organised into six Regions A few short special railways remain, however, outside the national system, **5**, 146
See *Railways, British*.

Railway Rails were originally made of iron, but are now made of steel and are produced in a rolling mill, **6**, 54, 73
—Standard rail lengths are 60, 45 and 30 ft.
Picture: Railway Crossing at Newcastle Station, **6**, 69

Railway Lines are laid with small gaps between them to allow for expansion during hot weather, **5**, 92

Railways, in the sense of public railways with locomotives operated by steam, began with the opening of the Stockton and Darlington Railway in 1825. The first really important railway was that between Liverpool and Manchester, opened in 1830.
The first important underground railway was the London Metropolitan Railway opened in 1863. The first deep-level "tube" railway was the City and South London Railway, opened in 1890. See *The Early Days of Steam*, **5**, 115 *et seq.*; *The Romance of the Iron Road*, **5**, 124 *et seq.*
—the beginning of the British railway system, **2**, 210, 212
—the first Royal railway journey, **2**, 213
—Stephenson's "Rocket," **2**, 214
—early railways in England, **2**, 411
—railway development in Canada, **3**, 158
—Winnipeg, a great Canadian railway centre, **3**, 180
—Australian railways, **3**, 220
—Railways in South Africa, **3**, 286
—Indian railways, **3**, 315, 322
—a high railway in Peru, **4**, 331
Pictures: Where the School Comes to the Children, **3**, 195
Built in New Zealand, **3**, 271
On the Line from Mafeking, **3**, 293
On One of the World's Highest Railways, **4**, 331
British Engineers Build Railways Abroad, **4**, 343
Engines for Europe's Railways, **4**, 348
An Early American Passenger Train, **5**, 124
A Century of Progress, **5**, 125
Inside the Driver's Cab, **5**, 126
Schools for Railway Signalmen, **5**, 127
A Standard Type for British Railways, **5**, 128
Crossing the Forth Bridge, **5**, 129
Trains for Holiday Makers, **5**, 130
"Silver Jubilee" and "Golden Arrow," **5**, 131
A Main-line Diesel-electric Locomotive, **5**, 132
When Royalty Travels, **5**, 133
Making a New Underground Railway Station, **5**, 134
Eighty Feet on Moving Stairs, **5**, 135
Osterley Station, Middlesex, **5**, 135
In an All-electric Signal Cabin, **5**, 136
Gant's Hill Station (London Underground), **5**, 137
An Australian Inter-State Express, **5**, 138
Through Commonwealth Countries, **5**, 139
The "City of Denver" on the Daily Run, **5**, 140
A Gas-Turbine Locomotive, **5**, 141
Types of Express Trains (U.S.A.), **5**, 142, 143
In Switzerland and Russia, **5**, 144
Entrance to Polhill Tunnel, Kent, **5**, 145
Colour and Light Signals, **5**, 146
Colour Plates The Spiral Tunnels of the Canadian Pacific Railway, **3**, *facing* 197
A "Merchant Navy" Class Pacific Locomotive, **5**, *Frontispiece*.
"A1" Class Pacific Locomotive on the East Coast Main Line, **5**, *facing* 44
A Diesel-engined Long Distance Train, **5**, *facing* 180
Special Colour Supplement: Railway Engines, **5**, *between* 128 and 129
Photo-tone Supplement. The First Passenger Steam Train, **8**, *between* 368 and 369

Railways, British, are now grouped into six regions: Southern Region (Waterloo); North Eastern Region (York); Western Region (Paddington); Eastern Region (Liverpool Street); London Midland Region (Euston); Scottish Region (Buchanan Street, Glasgow); the names in brackets being the headquarters of the different regions, **5**, 146

Railway Tunnels. See *Tunnels, Railway*.

Rain is the condensed water vapour of the atmosphere falling in drops. See *The Weather and Its Ways*, **5**, 1 *et seq.*
—the wonderful effect it has upon the earth, **1**, 37

Rainbow. An arch formed in the sky showing the prismatic colours in their order. It is caused by the internal reflection and refraction of light in the rain globules, **5**, 105; **9**, 353
Colour Plate: A Rainbow in the Sky, **5**, *facing* 36

Rainbow Bridge is in south-eastern Utah, U.S.A. It is a strange natural

RABBITS AT THE WATER-HOLE



Although the *rabbit* (see p. 309) is common enough in Britain a scene such as this with rabbits gathering at a waterhole is highly improbable. It was taken on Wardang Island, on the east side of Spencer's Gulf, South Australia, and the camera-man was concealed by a bush near the water-hole just before sundown during the summer when there was little surface water available.



Photos: Australian Geographical Society

The great mass of the Earth consists largely of *rock* (see p. 321) and from those near the surface much of the geological history of our planet can be read. In this aerial photograph is shown an unusual formation in part of the desolate McDonnell Ranges in central Australia. They show that at one time these rocks were under the sea, and, later, under compression, they became the folded structures seen here.

rock formation held to be sacred by the Navajo Indians.
Picture: 4, 294

Rainfall is heaviest in mountainous and hilly districts exposed to a moisture-laden wind, which, being driven up the slopes with colder air, condenses and precipitates its moisture.
In Britain the wettest parts are Cumberland, the Snowdon district of North Wales and the west coast of Scotland. Assam probably has the heaviest rainfall in the world, 5, 10 *et seq.*; 9, 352
Pictures: At the Close of a Rainy Day, 5, 2
When the Floods Came, 5, 3
A Recording Rain Gauge, 5, 14
Reading the Rainfall, 5, 14

Rain Forest is the name given to a tangle of great trees linked by festoons of creepers found near the Victoria Falls on the Zambezi River, 3, 296, 299

Rain Gauge. An instrument for recording the fall of rain. Rainfall is calculated in inches. See *The Weather and Its Ways*, 5, 1 *et seq.*
Pictures: 5, 14, 17

Rain, Signs of. A Poem by Edward Jenner, 9, 95

Raisina is a place near the ancient city of Delhi. Here the modern New Delhi, centre of Indian Government, has arisen, 3, 332
Picture: 3, 329

Raj is an Indian word meaning rule. Thus, the British raj meant British rule, 3, 312

Rajadamneon Avenue is one of the modern streets in Bangkok, the Siamese capital. Its lamp standards are decorated with the half-bird, half-human figures of Siamese legend.
Picture: 4, 208

Rajah is the name given to a native prince or ruler in parts of India and the East. See also *The White Rajah* (Sarawak), 2, 325 *et seq*

Rajasthan, United State of, is in India and was formed of a combination of states in March, 1949. It is the largest single unit in the Indian Union. See also *Rajputana.*

Rajputana, which means " the country of the Rajputs," was formerly the largest of the Indian States. Its people are mostly Hindu and are mainly concerned with agriculture. Since the division of India into two separate and independent countries, both members of the British Commonwealth, the different States of Rajputana have formed new Unions within the Union of India, *e.g.*, the United State of Rajasthan which was proclaimed on March 30th, 1949.
Pictures: A Wonderful Building at Ragnagar, 3, 311
A Rajputana Potter, 3, 356

Rajputs, means " sons of princes," and is the name of the inhabitants of Rajputana, 3, 341
Picture: 3, 342

Raleigh, famous for its cotton mills, is capital of North Carolina, a State of the U.S.A.

Raleigh, Sir Walter (1552–1618). Great English sailor and favourite of Queen Elizabeth, born at Hayes Barton, near Budleigh Salterton. He founded the colony of Virginia in North America, 2, 146, 158, 190, 406. (*p.h.*)

—he cultivated potatoes in Ireland, 1, 309
Pictures: The Boyhood of Raleigh, 2, 148
Spenser and Sir Walter Raleigh, 7, 129

Ram is the name we give to a male sheep, 6, 380

Rama the First Bridge is in Bangkok, the capital of Siam. It is named after King Rama, a Siamese king of old, and was built to commemorate the accession of the Chakkri dynasty to the Siamese throne.
Pictures: 4, 207, 210

Ramadan is the name of one of the great festivals of the Mohammedan religion. Known as Ramazan in some countries, it lasts thirty days and celebrates the revelation of the Koran to the Prophet Mohammed.
Picture: 4, 162

Ramayana is the name of an Indian epic story more than twenty centuries old. Characters from the story are represented by some of the figures guarding the temples of Siam.
Picture. 4, 210

Ramazan. See *Ramadan.*

Ramblers' Association. Founded in 1865 this society has done much work to preserve the rights of the people to common lands; to foster schemes to add land to valuable open spaces, such as Hampstead Heath; to fight in the Courts when necessary to preserve rights of way, such as footpaths, etc., about which many hundreds of cases have been successfully fought in every part of the country, 9, 4
Picture: Ramblers in Britain's Beauty Spots, 9, 4

R.A.M.C. stands for the Royal Army Medical Corps, the medical staff of the Army. Their badge is the staff of Aesculapius, the god of medicine.

Rameau, Jean Philippe (1683–1764). A famous French musical composer, 7, 173

Ramée, Marie Louise de la (1839–1908). English novelist. She is best known by her pen-name Ouida and wrote *Under Two Flags, Moths* and *The Massarenes*:

Rameses. Name of three Egyptian kings. The second made a canal through the isthmus of Suez, 5, 54

Ramie is a very tough fibre obtained from the stem of a plant of the nettle family grown in India and the East. Also called China grass.
Ramie is used for a number of purposes, cordage, fishing nets, baskets, cloth and many other articles being made from it.

Ramillies, Battle of (1706). Ramillies is a Belgian village in the province of Brabant. The battle was one of the great victories of John Churchill, Duke of Marlborough, over the French, 2, 177, 408

—London's first evening newspaper was published to give news of the victory 9, 208

Ramp. (1) Another name for *Cuckoo-pint* (*q.v.*).
(2) A gradual slope between two levels. The slope at the end of a railway station platform is a ramp.

Rampart. The main embankment or wall surrounding a fortified city or camp. Ancient British camps had earthen ramparts.

Ramsay, Allan (1686–1758). Scottish poet. He is best known by his poem *The Gentle Shepherd.*

Ramsay, Sir Andrew Crombie (1814–91). He originated the theory that lake basins are the result of the action of glaciers. Director-General of Geological Survey.

Ramsay, Sir William (1852-1916). Scottish professor of chemistry. He isolated argon, helium, neon and other inert gases from the air and made remarkable experiments with radio-active elements. Awarded Nobel Prize 1904, 7, 378, 394

Ramsey is a port and holiday centre in the Isle of Man, about 14 miles north of Douglas

Ramsgate. One of the great health resorts on the Thanet coast, Kent, 3, 36

Rancher. One who owns or works on a ranch, that is a large tract of pasture land in the New World on which horses, cattle or sheep are raised and fed.

Rancho is the name given in Mexico to an estate of smaller size than the largest estates which are called *haciendas*, 4, 298

Rand, The, is the name given to the goldfield of Johannesburg, 3, 289; 4, 383

Randfontein. A town on the west end of the Witwatersrand in the Transvaal. There are gold mines near the town, 3, 289

Randing is a term used in basket-making. It means taking the weaver over one stake and under the next, 8, 392

Ranger. An official in charge of a royal or public forest or park.
In Canada the word applies to a man employed to patrol, or range over, a forest and assist in extinguishing forest fires.

Rangitoto is the name of an island near Auckland, New Zealand. Upon the island is an extinct volcano, 3, 266

Rangoon is the capital of the republic of Burma and is a great port on the river of the same name which flows from the much greater River Irrawaddy. It is an important commercial centre and contains the famous Shwe Dagon pagoda, 4, 217, 220
Pictures. In a Rangoon Market-place, 4, 215
Loading the Rice Boats, 4, 217

Ranjitsinhji, Kumar Shri, Maharajah of Nawanagar (1872 1933). Best known as one of the greatest of cricketers. Famous specially for his leg-glide. Played for Cambridge University, Sussex and England.

Rank. Term designating the grade or office of a particular person. There are various ranks in the peerage, the Church, and many other institutions. In the Defence Forces there are equivalent ranks; an Admiral of the Fleet is equivalent to a Field Marshal or Marshal of the R.A.F.
Picture: Badges of Rank, 9, 376

Rannoch is the name given to a district of Perthshire, Scotland. It contains Loch Rannoch.

Ransome, Arthur (born 1884). A British expert on the literature of Russia, he is also widely known for

his children's books of which the *Swallows and Amazons* series have proved especially popular, **7**, 261, 276, 278
Picture: **7**, 262
Ranunculus. Bears pretty buttercup-like flowers and grows from a curious tuber that must be set with its claws downwards.
—name given by botanists to a wide family of flowering plants which includes the buttercup, clematis, anemone, delphinium and peony.
R.A.O.C. means Royal Army Ordnance Corps.
Rape is the seed of a plant belonging to the turnip family. Oil is produced from the seed which is also a staple food for some cage-birds, especially canaries, **8**, 313
Raphael, Sanzio (1483–1520). One of the greatest of Italian painters, he was a master of form and colour and a tremendous worker. He painted some 1,400 pictures, **7**, 20 (*p h.*)
Pictures: Balthasar Castiglione, **7**, 19
The Madonna del Granduca, **7**, 20
Portrait of a Young Man, **7**, 21
"The Madonna of San Sisto," **7**, 23
Raphia. A species of palm. It has a short trunk but the leaves are frequently enormous. The flower spikes are also very large.
Picture: **3**, 377
Raphoe is an ancient town of County Donegal, Eire. A grammar school was founded here in the time of Charles II. It is a wool-weaving centre
Rapier. A sword with a straight, narrow blade, ending in a sharp point. It has no cutting edge, and is fitted only for thrusting
The rapier was a favourite weapon for duelling and is now used in fencing (with a button on the tip) and as part of Court dress.
Rapunzel and the Prince. A Fairy Story, **5**, 319
Rarotonga is one of the Cook islands, belonging to New Zealand.
Ras-at-Tannura, an oil refining centre in Saudi Arabia. It is also called Ras Tannura, **4**, 206
R.A.S.C. means Royal Army Service Corps.
Picture: Amphibian Wing Craft, **5**, 180
Rasp means to rub down with a roughened tool. The tool called a rasp is a kind of file with large pointed teeth, used for smoothing wood and horses' hoofs.
A rasping noise is harsh and unpleasant.
Raspberry. A valuable garden fruit. It produces its berries on canes which rise in clusters and are usually fastened to wires or other supports. A wild form is found on commons and in woods.
—spreading across N. America, **1**, 338
Rat. Name given to many rodents of the family Muridæ, which includes mice, rats, hamsters, voles, lemmings and others, **1**, 137
Rat, Black. The true old English rodent, now being driven out by the brown rat, **1**, 136
Rat, Brown. Not the true British species; it came to us originally from Russia, **1**, 138
Picture: **1**, 136
Ratcliffe was once a little port on the Thames now commemorated by the London street Ratcliffe Highway. Sir Hugh Willoughby sailed from Ratcliffe, **2**, 304
Picture: **2**, 304
Rat, Coypu. See *Coypu Rat.*
Ratel. A small badger-like animal found in South Africa and India.
Rates. What are known as "local rates" are the payments which an owner or occupier of houses or land has to pay to the local council in order to meet the cost of the many services such as education, public assistance, drainage, etc., carried out by the council, **9**, 356
See also under *Local Government*, **9**, 66
Rath. An Irish hillfort of prehistoric times, **3**, 154
Rathlin is an island off the coast of County Antrim, Northern Ireland, from which it is divided by Ballycastle Bay. St Columba founded a church here in the sixth century, and the remains of a castle in which Robert Bruce found refuge can still be seen.
Rats, Fancy. Available in a variety of markings and colourings, these animals make interesting small pets. How to house and feed, **8**, 323
Rat-Shrews. Animals found in Malaya and Burma. They are creatures like our hedgehogs but have no spines.
Rat Snake. One of the snakes of India, it may reach a length of 7 ft. It is so called because it visits houses to search for rats and mice.
Rattan is a very thin-stemmed climbing palm, found in India, Eastern Asia and the East Indies. Rattans climb trees or trail along the ground, and sometimes attain a length of several hundred feet, though seldom more than an inch in thickness.
Their strong, flexible stems are used for basket-making, bridge-building and a number of other purposes, **5**, 43
Rattlesnake, American. A dangerous, poisonous snake. Gets its name from the rattling of the horny hollow rings at the end of its tail, **1**, 144
Pictures Head and Tongue, **1**, 145
Rattlesnake's Head, **1**, 145
Rattlesnake's Tail, **1**, 146
Rattle, Yellow. See *Yellow Rattle*
Rat, Water. See *Water Vole.*
Ravel, Maurice (1875–1937). Notable French musical composer. Among his works are *Bolero, L'Heure Espagnole* and *Miroirs*, **4**, 18; **7**, 189
Raven. Once common in this country, now found only in the wildest districts; a large, black bird with powerful beak.
Picture: . 178
Rawalpindi is a town of the West Punjab, in the Dominion of Pakistan. It is an important military centre, **3**, 338
Rawlinson, Sir Henry Creswicke (1810–95). He interpreted ancient monuments and gave to the world the story of Darius. He also excavated the traditional site of the Tower of Babel and the ruins of Nebuchadnezzar's palace, **9**, 15
Rawnsley, Canon Hardwicke Drummond (1851–1920). British clergyman who became Vicar of Wray, Windermere, and then of Crosthwaite, Keswick. He wrote several books on the Lake District and did much to preserve its beauties and associations. One of the original founders of the National Trust and its honorary secretary, **3**, 406
Rawtenstall is a town of Lancashire interested in cotton, woollens and other industries.
Ray. Name given to a fish of the Skate type. Its body is flattened, but it is not a true flatfish, **1**, 223
Ray, or Wray, John (1627–1705). A pioneer of modern botany. He was the first to classify animals and plants into species and so furnished a basis for the work of Linnæus and Cuvier.
Rayleigh, Lord, John William Strutt (1842–1919). Brilliant British scientist. In the course of experiments with Sir W. Ramsay on nitrogen he discovered the element argon.
Raymond, Count of Toulouse. He was a Count of Provence and was one of the leaders of the first Crusade. He died in 1105, **3**, 16
Rayon is the name given to artificial silk. The material is largely manufactured from wood and the process is described in the section *From Silk to Rayon and Nylon*, **6**, 345 *et seq.*
Pictures: Where Rayon Begins, **6**, 346
The Blades of a Pulverising Machine, **6**, 347
Rayon in the Making, **6**, 348
Viscose, **6**, 349
Rayon Spinning, **6**, 350
Doffing, **6**, 351
Viscose Rayon Staple, **6**, 352
Rays, Giant. See *Giant Rays.*
Rays, Invisible. See *Invisible Rays*
Razorbill. A sea-bird so called from the nature of its beak. It nests on rocky cliffs and is said to carry its young to the sea as soon as they are old enough to learn to swim.
Razor Shell or Razor Fish is the popular name for the solen, a well-known bivalve mollusc found round British coasts.
Colour Plate: A Collection of British Shells, **6**, *facing* 397
R.C. means Roman Catholic.
Re was the sun-god of the ancient Egyptians, and was the most venerated of their gods during the early dynasties, **9**, 9
Reaction means an action or movement in a contrary direction. The third of the great Sir Isaac Newton's three laws of motion is that to every action there is an equal and contrary reaction. If you strike a thing with your hand the reaction, or opposition, of the thing to your hand is exactly equal to the force of the blow.
Reade, Charles (1814–84). English novelist. He wrote *The Cloister and the Hearth, Hard Cash* and *It is Never too Late to Mend*, **7**, 215
Reading. First lessons in reading, a helping hand for tiny folk, with letters of the alphabet in pictures, **9**, 122 *et seq.*
Reading. The capital of Berkshire, this place stands on the Thames and Kennet. It had one of the finest Norman Abbeys in the country. Known today as the "biscuit town," it has also iron foundries and other interests, **3**, 18, 26

Realist. A writer or artist who represents things as they really are, not as one would like them to be. The great French author, Emil Zola, was a realist in his description of war and other horrors showing up their terrible character, and not attempting to idealise them in any way.

Ream is a measure of quantity used in connection with paper. One ream consists of 20 quires each containing 24 sheets, **6**, 333

Reaping Machines are used for cutting corn crops. The modern machine has a self-binder attachment for tying sheaves.
Pictures. Sussex Corn, **3**, 35
Harvesting in the Modern Style, **3**, 59
Harvest in the Western Plains, **3**, 176
Harvesting in Australia, **3**, 221

Réau means Réaumur (*pron.* ray-omur) when referring to the thermometer associated with his scale.

Réaumur, René Antoine Ferchault de (1683-1757). A Frenchman, his name is connected with a type of thermometer. Prepared a great work on insects in six volumes.

Rebec. This was a stringed instrument used in medieval times. Its origin was an Arabian instrument called the rebab, and its distinguishing characteristic was that it was played with a bow, and not plucked with the fingers. It is regarded by some authorities as being the ancestor of the viol and violin. See *Musical Instruments.*

Récamier, Jeanne, Madame (1777-1849). A notable Frenchwoman, she was famous for her "salons," to which she invited the most eminent men of her time, **7**, 70
Picture: **7**, 70

Recess is the name given to an alcove in a room. Bookcases or other large pieces of furniture are often fitted into recesses.
An interval or break between long periods of work is called a recess

Recife, formerly known as, Pernambuco is the capital of the Brazilian State of that name. It is an important seaport and commercial centre.

Recorder. Title given to the legal officer of an English city or borough which has a court of Quarter Sessions. He must be a barrister of at least five years' standing and he sits as the sole judge of Quarter Sessions. In the City of London the Recorder is the chief judge in the Mayor's Court. The first Recorder of London was appointed in 1298.

Recorder. An instrument of the flute family played with a whistle mouthpiece and held in front of the instrumentalist. It was played in this country in medieval times, but fell out of use. In recent years efforts have been made to bring it into use again, more particularly as a fairly simple instrument for young people.

Record Office, Public, London, is the depository of public and historical documents. These go back many centuries and include Domesday Book.

Reculver is a town of the north Kent coast noted for its Roman remains.

Red Admiral. A well-known and beautiful variety of butterfly, **1**, 235; **8**, 281
Special Colour Supplement: British Butterflies, **8**, *between* 288 and 289

Red-Backed Shrike. A migratory bird, spending the summer in this country. It collects its food on thorns and along hedgerows for which reason it is called the "Butcher Bird."
Picture: **1**, 182
Special Colour Supplement. British Wild Birds, **1**, *between* 160 and 161 (Plate 3)

Redbreast. Name given to the Robin (*q.v.*).

Red Campion. A wild plant with downy leaves, bearing pink or purple flowers, **1**, 304
Special Colour Supplement: British Wild Flowers, **1**, *between* 304 and 305 (Plate 2)

Redcar. A holiday and seaside resort of the North Riding of Yorkshire, 8 miles north-east of Middlesbrough. It has a wonderful stretch of sand

Red Cross Knight, The, The Adventures of. A Tale from the Faerie Queen, **5**, 397

Red Deer. This is the largest of the deer family found in Britain and was at one time common in most forests in the British Isles. It is now found chiefly in Scotland and on Exmoor in England, as well as in the more isolated parts of Europe. The stag stands about 4 ft 6 in high at the shoulders.

Redditch is a town of Worcestershire famous as a centre for the manufacture of needles

Red Hand, A, is the badge of Ulster, **3**, 148

Red Herring. Name given to a fresh herring when it has been smoked

Red Hot Poker is the name given to the plant kniphofia.

Red Idol is the name of an image in a gorge on the route between India and Tibet.
Picture. **4**, 233

Red Indians were the original inhabitants of America. They were called Indians by Columbus because he believed he had reached India by voyaging to the west. The race is a noble one and now lives peacefully, mostly in reservations specially provided for them both in Canada and the U.S.A., **9**, 25
Picture: Two Chiefs, **9**, 34
Photo-tone Supplement. Red Men of America, **9**, *between* 368 and 369

Redistribution of Seats Act (1885) divided boroughs and county boroughs so that only one member of parliament sat for each electoral district. Other Acts have been passed since then altering and increasing the number of seats, **2**, 222

Red-Legged Coon. Name sometimes given to that rare bird the *Chough* (*q.v.*).

Red Plain, The. This is the name given by geologists to a part of the midlands of England where the soil is red, **3**, 70 *et seq.*; **9**, 309

Redpoll. The smallest member of the finch family; it comes to this country in the late summer and remains during the winter. The plumage is reddish brown, with a red head, and white underparts. In habits and song it resembles the linnet.

Red River. (1) A river of the U.S.A., 1,500 miles in length, which flows into the Mississippi
(2) A river which rises in the United States and flows into Lake Winnipeg, **3**, 179
(3) One of the principal rivers of Indo-China, **4**, 212

Red River Colony was the name of the settlement founded by Thomas Douglas in Canada in 1811. Winnipeg now stands near its old site, **3**, 158

Redruth is a town of Cornwall associated with tin-mining and engineering, **3**, 48

Red Sea. A sheet of water between Arabia and North-East Africa. It was mentioned in the Old Testament and is some 1,200 miles in length, separating Egypt from Arabia.

Redshank. One of the wading birds, to be found on the seashore and on marshy ground. It obtains food by digging its long beak into mud or sand. It belongs to the Plover family and is both a resident and a winter visitor to many parts of Britain's coast.
Picture. **1**, 174

Redskins is a name given to *Red Indians* (*q.v.*)

Red Spot. Name given to a mysterious part of the planet Jupiter, **8**, 150
Picture **8**, 152

Red Square, great meeting-place in the city of Moscow and the site of Lenin's tomb, **4**, 116
Picture **4**, 107

Red Squirrel. See *Squirrel, Red.*

Redstart. A bird a little over 5 in. in length noted for its sweet song. It is a summer resident in many parts of Britain arriving on the south coast in April. It has a rich chestnut tail and flits from branch to branch with a jerky flight.
The Black Redstart is a winter visitor, with a similar tail, but sootier in general appearance than the common Redstart.

Redwing. One of our song-birds and a winter visitor, member of the thrush family, distinguished from the Song-thrush by its long pale eye-stripe and reddish flanks.

Redwood Trees. Giant trees found in California, some over 300 ft. in height.
Pictures. Californian Redwood Trees, **1**, 331
Tree Tunnel in California, **1**, 327

Reech, Kay. A famous American racing motorist, **5**, 176

Reedbuck. Name of an antelope found in parts of Africa. It stands about a yard in height at the shoulder.

Reed Bunting. A small bird common in Great Britain. It is found in marshy places and builds its nest in reeds. The back and wings are red-brown.

Reed Warbler. A small bird and summer visitor to this country; it is a sweet songster. It is plain brown in appearance, often not easily distinguishable among the reeds, and its nest is a work of art.

Reeve. Name given to the female of the *Ruff* (*q.v.*).

Refectory. That part of a monastery in which the monks eat their meals, **2**, 118

Referendum is a method used to enable the whole body of voters in a country to give the final decision as to whether a particular law shall become operative or not, **9**, 318

Refinery. A building or place equipped with apparatus for refining metals, sugar, oil or other substances. The process, called refining, is the separation of what is valuable from what is worthless or of less value.
In a petroleum refinery raw petroleum is split up into liquids of various densities petrol, paraffin oil, lubricating oil, etc.

Reflex Actions of the body are those that take place without our having to think about them, *i.e.*, sneezing, **8**, 229

Reform Act (1918). There have been a number of Reform Acts passed since 1832 for increasing the number of voters in Britain to ensure that a proper expression of public opinion shall be recorded at the elections. The Act of 1918 was probably the most far-reaching and among other extensions it granted, with certain limitations, the vote to women for the first time, **2**, 231

Reformation means an act or process of reforming or amending, a change for the better.

Reformation, The. By this is meant the reconstruction of religious thought and life which occurred during the sixteenth century, **2**, 128, 140, 406; **4**, 74 *et seq*
Pictures: The Dawn of the Reformation, **2**, 140
The Reformation Monument at Geneva, **4**, 55
Where Luther Worked on His Translation of the Bible, **4**, 75
Luther's Study in the Wartburg, **4**, 76

Reform Bills (1831-32) Long before the first of these was introduced in 1831 there had been a demand for changes in the way elections were conducted. After rioting and elections, the Reform Bill was passed in 1832, giving votes to many more people and providing fairer representation, **2**, 210, 411
Picture: The Fight for the Vote, **2**, 209

Refraction means a bending aside or out of course. Light-rays undergo refraction when they pass through a lens, which bends them in the direction of its thickest part. They are also refracted, or bent, when they pass from one medium into another, as from water into air, or from air into water.
Without refraction we should have no telescopes, microscopes or spectacles.

Refrigerator. A room, cupboard, or enclosed space in which the temperature is kept at or near freezing point. By the use of refrigeration, foods such as meat, fruit and vegetables can be kept perfectly fresh, **9**, 346
Picture: How a Refrigerator Works, **9**, 351

Refugee. One who leaves his home in times of political trouble, war or persecution, and takes refuge in another place or a foreign country.

Regal means royal; kingly; having the qualities of a ruler; belonging to royalty; stately; dignified as a king or queen among others.

Regalia. The royal regalia includes crowns, sceptres, the staff of Edward the Confessor, the ampulla for oil, swords, spurs, jewels, etc.
The regalia is to be seen at the Tower of London
Colour Plate. Symbols of Royalty, **10**, *Frontispiece*

Regatta. A sporting contest on water, consisting of races between skiffs, rowing boats, or sailing yachts. The word came from Venice and was used at the first regatta held in England which took place on the Thames in 1775.
Picture: A Regatta on the Thames, **10**, 317

Regency, The. This title is given to a period in English history (1811–20) during which George III was ill and his son, later King George IV (*q.v.*) ruled as Prince Regent The period was famed for its fashionable dandies such as Nash (*q.v.*), its prize-fighting, and its architecture, **2**, 208

Regensburg is a city of Bavaria on the River Danube and a manufacturing centre, **4**, 90

Regent class of ships, built for war and peaceful trading, were built in the reign of Henry VII and known as "the King's ships," **8**, 2
Picture For War or Peaceful Trading, **8**, 4

Regents. See *Capitani reggenti.*

Regent Street, London, is named after the Prince Regent (later King George IV) and is a fashionable shopping centre.
Picture **3**, 20

Regiment of Potsdam Guards. The crack troops of the army of King Frederick William I of Prussia. Every man in the regiment (which was named after the town of Potsdam) was a giant in stature, **4**, 75 and 76

Regina is the capital of the Canadian province of Saskatchewan. It has a population of nearly 60,000.

Register means to record. A letter containing something valuable is usually registered by the sender at a post office, where the address of the person to whom the letter is to be sent is registered, or entered in a book, and a copy given to the sender as proof.
A book in which records are kept is called a register. The clergyman of a parish has to keep registers of marriages, baptisms and burials.

Rehearse means to practise before giving a performance in public. Since "practice makes perfect" the actors taking part in a play rehearse it privately many times before it is produced.

Reichstags-Gebaude is the German title for the Parliament Building in Berlin. It was badly damaged by fire in 1933 and was not restored before war came to complete the destruction. The German Parliament was usually referred to as the Reichstag.
Picture **4**, 86

Reid, Mayne (1818-83). Well-known writer of tales of adventure, such as *The Scalp Hunters, Young Voyagers,* etc.

Reigate is a residential town of Surrey. The borough includes the newer district of Redhill.

Reign of Terror. This is the name given to that period in the French Revolution during which large numbers of people were put to death as enemies of the revolution. Often as many as fifty or more were killed each day in Paris alone, **2**, 410

Reindeer. An animal of the deer tribe found in the Arctic regions. The female has antlers as well as the male, **1**, 104. (*p.h.*)

Reindeer Moss, a kind of lichen. Principal winter food of reindeer and caribou, **1**, 104, 357

Reinforced. Made stronger by additions. An army is reinforced by sending to it fresh forces or bodies of troops.
Concrete is reinforced by burying steel rods in it in such positions that they take practically all the stretching strains put upon it.

Reins are the leather straps attached to the bridle and used for driving a horse. A child's reins are easily made with wool on an empty cotton reel, **8**, 380

Rejaf. A port of the White Nile in the Anglo-Egyptian Sudan. It is possible to travel up the Nile by steamer as far as this point, **4**, 197

Relaxing. Collectors of butterflies and moths have sometimes to relax or soften the insects they catch. How this is done, **8**, 290

Remagen. A German town on the Rhine between Cologne and Koblenz. During the Second World War, the Germans failed to destroy the bridge across the Rhine at this place and the Allies were over the river before this mistake could be remedied, **2**, 256

Rembrandt, Herman van Ryn (1606-69). Celebrated Dutch painter who excelled in portraits of elderly people, **7**, 48
Pictures: Françoise van Wasserhoven, **7**, 45
The Three Trees; The "Lansdowne" Mill, **7**, 46

Remembrance, National Day of, which has taken the place of Armistice Day, is now held on the Sunday before November 11th, unless November 11th or 12th falls on Sunday, in which case it is, of course, held on that date, in remembrance of the two World Wars, 1914–18 and 1939–45.

Remus. Twin brother of Romulus, said in ancient legends to have founded the city of Rome, **2**, 49
—Remus killed by his brother, **2**, 50
Pictures: Discovered by a Wolf, **2**, 49
Meeting with Silvia, **2**, 50

René the Good (1409-80). A famous Duke of Anjou. He was a wise ruler, but is best remembered for his poems and other writings. He had a castle at Tarascon, **4**, 16

Renfrew is the county town of Renfrewshire, Scotland. It has vast boiler works and shipbuilding yards, **3**, 120

Renfrewshire is a county of south

west Scotland. It is an important farming district and has coalfields. Such large towns as Paisley, Gourock and Greenock are in this county.

Renaissance. The revival of classical learning and art which began in Italy in the fifteenth century, and spread to other countries. It was undoubtedly helped by the capture of Constantinople by the Turks in 1453, an event which ended all hopes of reviving the Eastern Roman Empire; and, as it were, threw Europe back on its own resources.
The Renaissance may be regarded as the period of change between the Middle Ages and what we call modern times, **2**, 138, 406; **4**, 149 *et seq.*; **7**, 12

Rennet. Name of a substance made from part of a calf's stomach to cause milk to curdle, as when making junket.
—a rennet is made from butterwort by people of Lapland, **1**, 340

Rennie, John (1761–1821). A British engineer, he built three bridges across the Thames in London, **3**, 8

Reno is the largest city of Nevada, U.S.A.

Renown. H.M.S., was the ship on which Their Majesties King George V and Queen Mary travelled in their tour of 1927, **2**, 244

Representation of the People Acts of 1867 and 1884 increased the number of people who were entitled to vote, **2**, 222

Reptiles, Age of. See *Age of Reptiles.*

Repton. This small Derbyshire town is noted for its school, founded 1557. At one time it was the place of residence of the kings of Mercia.

Republic. A country governed by persons elected by the people, having no hereditary ruler. Many European countries are now republics; as are all countries in the New World, except Canada. See *Our Parliament and Others*, **9**, 40 *et seq.*

Republic of Ireland Bill (1948). This Bill was passed by the Eire Parliament and came into effect in 1949, severing Eire's links with the British Commonwealth of Nations and making her into the independent Republic of Ireland. Northern Ireland, however, remained in the United Kingdom, **3**, 152

Repulse. A British battleship sunk by the Japanese during the Second World War, **2**, 252

Repulse Bay, is an indentation of the coast in the North-West territories of Canada, **2**, 303

Reredos. A screen behind the altar of a church. In many cases it is highly sculptured and contains niches for statues of saints.
Very fine reredoses may be seen in many of our old cathedrals.
Pictures: St. Paul's Cathedral, **7**, 312

Research means a careful examination of facts. It is carried out by scientists, historians, students and others and our universities grant scholarships and fellowships to enable research workers to continue their tasks. See *Science and the Future*, **7**, 408 *et seq.*

Reseda. Family name of the plant *Mignonette* (*q.v.*).

Residue means something that remains over. Ashes are the residue of coal burned in a grate. All the matter that will burn has disappeared, and only the unburnable material is left. If you boil brine, the water in it evaporates, leaving salt as a residue.

Resin is a gummy substance which oozes from certain trees and hardens. It easily catches fire, does not dissolve in water, and is brittle.
It is used for rubbing on violin strings and in the manufacture of soap and varnish.

Resinoid is the name given to artificially-produced resin, a material used in the making of plastics, **6**, 369

Resolution was the name of one of Captain Cook's famous ships, **2**, 312, 366
Picture: **2**, 310

Respectively. Individually; severally
The proper use of the word, and its meaning when so used, can best be explained by an example: "He gave an apple, a pear and an orange to James, Harry and David respectively."
Here three things are given to three persons, and the word "respectively" makes it clear that the thing and the person should be "paired" in the order given.

Respiration is the breathing of air into our chests and breathing it out again. About one-fifth of the air we breathe is oxygen, **8**, 218

Respiration, Artificial. See *Artificial Respiration.*

Respiratory means having to do with respiration or breathing. The lungs, wind-pipe and larynx are the chief parts of the respiratory system.
Movements of the chest due to breathing are respiratory movements.

Rest-Harrow. Name of a wild plant growing to the height of about 1 ft. and bearing reddish flowers. It has a strong root system which is apt to stop or "arrest" a harrow as it is pulled over the field, hence the name.

Restoration. This occurred in 1660 when Charles II returned to England and was restored to the throne. The word is also used as a general term for the period 1660–88, during which England was ruled again by Stuart kings, **2**, 165 *et seq.*

Retailer. One who sells goods by retail, that is, in small quantities. In many cases goods are sold by the manufacturer to a wholesaler in large quantities; the wholesaler sells again in smaller quantities to a number of retailers; and these again sell, in still smaller quantities, to the public.

Retort. A vessel used in distilling. The type of retort used in chemical laboratories is generally a glass bulb with a long neck bent to one side.
The large retorts in which coal is distilled at gasworks are horizontal or upright chambers, usually made of fireclay. (*p.h.*)

Retort Houses are features of a gas works. In the retorts gas is driven out of the coal by heat, **6**, 266, 288
Pictures: How Coal Gas Travels from Retort to Consumer, **6**, 262–263
Inside a Retort House, **6**, 265

Retriever. A sporting dog of the spaniel type used for the retrieving or collecting of game.
Picture: **1**, 88

Réunion. An island of the Indian Ocean about 420 miles east of Madagascar. It is an overseas department of the French Union. St. Denis is its chief town and Pointe-des-Galets its chief port. Sugar is one of the chief products, **4**, 18

Reuter, Paul Julius de, Baron (1816–99). In 1851 he founded Reuter's Agency for transmitting commercial news by telegraph. It is now a great British news agency with a world-wide organisation. Reuters Trust has been set up to ensure its continuance and it is associated with the Press Association (*q.v.*), **9**, 218
Pictures: News from Abroad; Distributing the News, **9**, 208

Reval. Another name for *Tallinn* (*q.v.*).

Revenge. The name of Sir Richard Grenville's ship which, with 150 men, fought 5,000 Spaniards. The story is finely told in Tennyson's poem *The Revenge*, beginning "At Flores in the Azores, Sir Richard Grenville lay," **3**, 413

Revenge. The flagship of Sir Francis Drake.
Picture: **2**, 153

Revenue means income. The national revenue is the money obtained by taxation, duties, customs and so on. The revenue of a local authority comes from rates.

Reverberatory means beating down; reflecting. In a reverberatory furnace, used for smelting or refining metals, the ore, etc., is laid on a basin-like hearth, covered by a domed roof. Flames passing over the hearth heat the roof, which reverberates, or reflects, its heat down on to the hearth.

Rev. means the Reverend. The title of a clergyman or minister. May also mean revolutions or *revs.* when applied to an engine.

Reverse, on coins, is the side containing the "tail"; obverse is the head side, **8**, 291

Review means to survey, to examine. The reviewer of a book reads it carefully and then writes his opinion of its merits.
Troops are reviewed when they are inspected by a high officer, and put through drill or movements to prove their smartness.

Review, The. A journal published by Daniel Defoe from 1704–13. The "leading article" was first introduced in this journal, **2**, 180; **9**, 208

Revolt in the Desert. A shorter version of T. E. Lawrence's *Seven Pillars of Wisdom* (*q.v.*), **2**, 388

Revolutionary. One who takes part in or supports a political revolution. A revolutionary aims at turning things round or over, in the sense of overthrowing the existing government, or system of government, and replacing it with another.

Revolutionary War (1793–1802). In which Britain and her allies fought

FOR BUSINESS AND PLEASURE



Wm. Gordon Davis.

A golden grasshopper, crest of Sir Thomas Gresham, ornaments the eastern dome of the *Royal Exchange* (see p. 325). It was on the first Royal Exchange, destroyed by the Great Fire in 1666.



Associated Press.

Radio (see p. 309), one of the marvels of 20th century progress, is now part of the fireman's equipment. Here we see an officer directing operations with his "walkie-talkie" apparatus in action.



Topical.

Given the right weather few sporting events are more enjoyable than a *Regatta* (see p. 315), when oarsmen or yachtsmen hold races on some pleasant stretch of river or round the coast. Our picture is typical of the regattas held on many of our rivers and was taken at the Staines Amateur Regatta, with a Maidenhead crew winning against Eton Excelsior in the Junior Eights.

revolutionary France to maintain "security," **2**, 196 *et seq.*

Rewi. The name of a Maori leader in the mid-nineteenth century when the Maoris were resisting the British settlers in New Zealand, **3**, 252

Reykjavik is the capital of Iceland, an Island-Republic since 1944. It is the seat of government and has a university. Natural hot-springs give a supply of constant hot water, **4**, 47

Reynolds, Sir Joshua (1723-92). The greatest portrait painter of his age and one of the outstanding English artists; he became first president of the Royal Academy, **2**, 411; **7**, 77
Picture: **7**, 77

R.F. means *Republique Française, i.e.*, the French Republic.

Rhages is a town of north central Iran (Persia). It was sacked by Jenghis Khan in the thirteenth century and was the birthplace of Harun-al-Rashid, the famous caliph of Baghdad.
Picture: **4**, 204

Rhayader is a holiday resort and tourist centre of Radnorshire. It stands on the River Wye. The name comes from Rhaiar Gwy, meaning "the Falls of the Wye" but there are no longer any falls there.
Picture: **3**, 104

Rhea. A South American bird, known sometimes as the American Ostrich. This bird does not fly, but can run at great speed.

Rheims. A very ancient and historical city of the Marne Department of France. Associated with Joan of Arc and famous for its cathedral. It is a centre of the champagne industry.
Picture: Joan of Arc at Charles VII's Coronation, **2**, 133

Rheinstein, Burg. See *Burg Rheinstein.*

Rhenish Gaul was that part of France in which the Burgundians settled after the fall of the Roman Empire. It consisted of that part of France lying south-west of the river Rhine, in the valleys of the rivers Rhone and Saone, **4**, 5

Rheostat. A device for regulating electric currents. In principle it consists of a series of resistances, any number of which may be brought into the circuit by moving a handle. The rheostats of an electric tram or train correspond to the regulator of a steam locomotive. Very small rheostats are used on wireless sets, to control the heating of valve filaments.

Rhesus. Name of a variety of monkey allied to the *Mocaque* (*q.v.*). It is common in Northern India.
Photo-tone Supplement: Monkeys and Their Ways, **1**, *between* 96 and 97

Rhetoric is the art of public speaking; oratory. Nowadays we use the word in a rather contemptuous way, as meaning fine language without any real feeling or conviction behind it.

Rheza Khan Pahlevi, Shah of Persia from 1926 until 1941 when he abdicated. He died in South Africa in 1944. He was in many ways the maker of modern Iran (Persia) and was the leader of the movement which deposed the old Shah in 1925. He was succeeded on his abdication by his son Muhammed Riza Pahlevi, **4**, 202

Rhine. The River Rhine, about 760 miles in length, rises in Switzerland and flows through Lake Constance. For great distances it forms the boundary between France and Germany, then flows through Germany and Holland to the North Sea. It is one of the most important commercial rivers in the world, **4**, 65 *et seq.*
Pictures: One of the Very Numerous Castles of the Rhine, **4**, 65
Snapshots of Beauty and Romance along the banks of the Rhine, **4**, 66 and 67
crossed by the Allies (1945), **2**, 256
A Bird's Eye View of the City of Cologne, **4**, 68
After War's Devastation, **4**, 69
When the Work of Restoration Began, **4**, 70

Rhineland is the name given to that part of Germany through which flows the Rivers Rhine, Moselle, and Saar, **4**, 77

Rhinellus. An extinct fish which existed in prehistoric times.
Colour Plate: Animals of Prehistoric Times, **1**, *facing* 36

Rhinoceros. An animal found south of the Sahara in Africa, as well as in India and Java. The creature has a massive body supported on short legs; a long head and short tail, **1** 71. (*p.h.*)
—how the rhinoceros uses its horn, **1**, 74
Pictures: Cow Rhino at Home, **1**, 72
Rhinoceros at Bay, **1**, 73

Rhinoceros, Indian. This animal has only one horn, whilst its African cousin has two, **1**, 74

Rhinoceros, Woolly. An extinct animal having long hair which once roamed in Europe, entire carcases being found in ice-bound wastes of Siberia, **1**, 11
Pictures: In Siberia, **1**, 31
Skull found in London, **1**, 32
Colour Plate: Animals of Prehistoric Times, **1**, *facing* 37

Rhizome. A root-stock which grows partly underground. It produces both roots and shoots and is best seen in some of the irises

Rhode Island is a State of the U.S.A., discovered by the navigator Verrazano. It has great manufacturing interests, fisheries and farms. It is the smallest of the States and has Providence as its capital, **2**, 158
Pictorial Map: **4**, 291

Rhode Island Red. One of the most popular breeds of domestic poultry, **8**, 317

Rhodes, Cecil John. Born at Bishop's Stortford, Hertfordshire, in 1853, he died in 1902. He joined his brother in Natal at seventeen, but returned to graduate at Oxford. Going back to Kimberley, he became a member of the Cape Parliament. Thereafter he worked and planned to make the district north of Cape Province British and it is now named Rhodesia. One of our greatest Empire builders, **2**, 218 *et seq.*; **3**, 281, 296
Pictures: Cape Town's Centre of Learning, **3**, 277
A Statue of Cecil Rhodes, **3**, 298
Photo-tone Supplement: The Union of South Africa, **3**, *between* 304 and 305

Rhodes is the name of the largest island of the Dodecanese group in the eastern Mediterranean and of the historic city on that island whose Crusader fortifications and palaces can still be seen, **4**, 158
Pictures Where the Knights of St. John once Ruled, **4**, 158
A Caïque Sets Sail from Rhodes, **4**, 159
Lindos, where St. Paul Landed, **4**, 161

Rhodesia. This great African territory covering more than 400,000 square miles forms part of British South Africa. Its provinces are Southern and Northern Rhodesia (*q.v.*) and it is named after Cecil Rhodes (*q.v.*), **3**, 296
Pictures: A City of the Ants, **3**, 300
The Ruins of Zimbabwe, **3**, 301
Watering Tobacco Seed-beds, **4**, 367

Rhodesia, Northern. Part of British South Africa, and that part of Rhodesia north of the Zambezi River. The capital is Lusaka. Agricultural products include wheat, cattle, and Rhodesian redwood timber. There is much mineral wealth including copper, lead, and zinc, **3**, 296, **4**, 381

Rhodesia, Southern, forms part of British South Africa. It begins at the northern tip of the Transvaal and extends to the River Zambezi. Cattle, tobacco, citrus fruits and dairy produce are the main products, but there are important coal, iron, and steel resources. Salisbury is the capital, **3**, 296, **4**, 382
Pictures A Statue of Cecil Rhodes, **3**, 298
Two Views of Victoria Falls, **3**, 299
The Ruins of Zimbabwe, **3**, 301
Photo-tone Supplement Roaring Waters and a Silent Bell, **3**, *between* 304 and 305
Colour Plate The Victoria Falls, **3**, *facing* 277

Rhodes Scholarships were founded with money left by Cecil Rhodes for scholarships at Oxford to students from British Dominions and the U.S.A. Sportsmanship as well as moral qualities and learning are taken into account in awarding these scholarships, **2**, 220

Rhododendron. An evergreen flowering shrub, first brought from India in the seventeenth century.
—how it propagates itself, **1**, 277

Rhodope is the name of a mountain system of south-western Bulgaria. These mountains run in a south-easterly direction from Sofia down over the frontier into north-eastern Greece. Between them and the Balkan mountains are the richest farmlands of Bulgaria, **4**, 96

Rhondda is a district of Glamorganshire on the River Rhondda. Its two valleys are great centres of coal production.

Rhone. A river of France, rising in Switzerland and flowing to the Gulf

of Lions. It is about 500 miles in length, 4, 13, 148
—Hannibal crossed the Rhone, 2, 64
Photo-tone Supplement: On the Seine and the Rhone, 4, *between* 112 and 113
Rhosneigr is a small seaside resort of Anglesey, 3, 102
Rhubarb. A plant the stems of which are cooked, medicines being obtained from the roots.
– Burbank's Rhubarb, 1, 379
Rhyl. A noted holiday resort on the coast of Flintshire in North Wales, 3, 86, 106
Ria is the word used in Eire to describe a long, deep inlet from the sea, 3, 144
Rialto. This is the name of a famous bridge in Italian city of Venice. Built between 1588 and 1592, the bridge crosses the Grand Canal. It is a closed-in bridge, being flanked by shops.
Picture: 4, 150
Ribbing is formed in knitting by making so many stitches plain and so many purl, 8, 400
Picture. 8, 399
Ribble. Name of an important river of Yorkshire and Lancashire. It empties into the Irish Sea after passing through Preston.
Ribbon-Fish are found off the coasts of Norway and Sweden. They have long bodies, ribbon-like in form, and may reach a length of 8 ft. Their mouths are shaped like tubes.
Ribbon Gum is the name of a species of Australian eucalyptus tree.
Picture 3, 206
Ribbon Lightning is the same as forked lightning, 5, 26
Picture: 5, 18
Rice is the world's most important food plant. More people live on rice than on wheat or other grain, most of them in the countries of the Far East There are many hundreds of distinct kinds of rice and it is most widely grown in China, India, Japan, the Philippines, and the United States See also *Paddy*, 1, 309; 3, 364; 4, 212, 240 *et seq.*
Pictures: Workers in a Cochin-China Ricefield, 4, 212
Hillsides in the Philippines, 4, 214
Loading the Rice Boats, 4, 217
Up Amidst the Rice Fields, 4, 240
Grasses Cultivated for Food, 10, 71
Rice-Grains is the name astronomers give to tiny markings on the sun's photosphere, 8, 121
Rice Straw. A material much used for the making of hats, 1, 309
Richard I (1157 99). King of England. Known as the Lionheart or Cœur de Lion. Played a great part in the Crusades, 2, 102, 404; 4, 156
Picture: Richard I Leads His Crusaders, 2, 105
Richard II (1367–1400). King of England, son of the Black Prince. In his reign there was much unrest among the peasants, 2, 126, 404
Richard III (1452–85). Seized the English throne on the death of Edward IV and ruled for two years. He was killed at the Battle of Bosworth. His crown was found later hidden in a hawthorn tree, 1, 338; 2, 136
Picture. A King Fights for His Crown, 2, 139
Richard, Duke of York (1411 60). He was heir-presumptive to the English throne until the birth of Henry VI's son. But he was not admitted to the King's counsels and fought for his rights in the Wars of the Roses He was killed at the Battle of Wakefield, 2, 135
Richard, Prince. Second son of the Duke and Duchess of Gloucester. Born 1944.
Richborough is a seaport of Kent, near Sandwich. It has interesting Roman remains, and was known as Rutupiæ when the Romans occupied Britain. At that time it was the principal port of entrance to Britain.
Richest King in the World. Title bestowed upon Crœsus, ruler over Sardis in Lydia, 2, 1
Richelieu, Jean Armand du Plessis de, Cardinal and virtual ruler of France from 1624 until his death in 1642 Beside his rule at home, he interested himself in colonial ventures and founded the "Company of New France" to develop French interests in Canada, 3, 156
—he imposed savage taxes, 4, 7
Richmond, Henry Tudor, Earl of See *Henry VII.*
Richmond is the state capital and largest city of Virginia, U.S.A. It is an important tobacco distribution centre, 4, 293
Picture: 4, 262
Richmond, Surrey, a residential town, 9 miles south-west of London The hill with its view of the Thames, together with its park, makes it a favourite riverside resort for Londoners
Richmond, Yorkshire. A town of the North Riding. The castle remains date from the eleventh century. The present grammar school is a modern building but the foundation dates from the sixteenth century Near the town are the ruins of Easby Abbey.
Picture. The Library, High School, Richmond, Yorks., 7, 268
Rickmansworth is a residential town of Hertfordshire. It stands on the River Colne, 18 miles from London and 4 miles from Watford
Ricksha, or Rickshaw (also jinriksha). A light, two-wheeled carriage drawn by a man. Used in Ceylon, South Africa and other countries, 3, 310; 9, 361
Picture: 3, 304
Rideau Canal. This links Ottawa, the Canadian capital, with Kingston (on Lake Ontario) by way of the Rideau Lakes, 3, 185
Riding comes from an old word meaning "thirds" the county of Yorkshire being divided into three ridings, the north, west and east, 3, 82
Ridley, Nicholas (*c.* 1500 55) was an English bishop and martyr. He was born about 1500 and was burned at the stake at Oxford in 1555 in company with Cranmer and Latimer, 3, 399
Riebeek, Johan van (1634–70) founded a Dutch colony in the Cape Province of South Africa in 1652, 3, 276
Rifles were adopted generally for military purposes in the 'sixties of the last century, when breach-loading firearms came into use.
The rifling of the barrel with special grooves gives the bullet a spin which keeps it stable during flight, and so enables a long, pointed bullet offering comparatively little resistance to the air, to be used.
Riga is a great seaport on the Baltic Sea, capital of Latvia, a republic of the U.S.S.R. It stands near the mouth of the River Dvina, 4, 52
Right, Petition of. See *Petition of Right.*
Rights, Bill of (1689) listed the illegal deeds of King James II and the rights of the English people. It ranks as one of the great documents of English liberties, 2, 173
Rigi is a mountainous mass of the Alps of Switzerland in the vicinity of Lucerne It rises to a height of nearly 6,000 ft., 4, 62
Rijwielenpad. The Dutch word for the special bicycle paths to be found in Holland, 4, 30
Riksdagshus. The Swedish houses of Parliament at Stockholm
– it has an Upper and Lower Chamber, corresponding to the British Parliament, 9, 45
Rimini. A town of northern Italy from which a railway runs to the republic of San Marino, 4, 166
Rimsky-Korsakov (1844–1908). Notable Russian musical composer, he wrote some thirteen operas, including "The Maid of Pskov," 7, 187
Rineanna is the Irish name for the Shannon airport, 15 miles west of Limerick. From here services fly to all parts of Europe and across the Atlantic to Canada and the U.S.A., 3, 152
Ringdove. Another name for the wood pigeon (*q.v.*) So called from the ring round its neck.
Ringed Plover. See *Plover.*
Ring Ouzel. One of our summer bird visitors spending its stay with us in wild, moorland districts About 10 in. in length, it somewhat resembles the blackbird, but has a white patch on the throat and greyish edging to the wings.
Ring-Tailed Lemur. A monkey-like animal having its tail ringed with black and grey rings. Its home is in Madagascar.
Rio de Janeiro, meaning "River of January," is the name given to:
(1) One of the states of the United States of Brazil
(2) The Federal capital of Brazil (*q.v.*) which stands on a wonderful harbour first discovered in 1502 The capital is a beautiful city and has a population of over 2,000,000, 2, 281; 4, 311
Pictures Presidential Palace, 4, 311
Ascending the Sugar Loaf, 4, 312
The Praca Paris, 4, 313
By the "River of January," 4, 314
Snapshots: Rio de Janeiro, 4, 315
Building a Pavement, 4, 316
Colour Plate: In the Capital of Brazil, 4, *facing* 301
Rio de la Plata, or River Plate, in South America is not so much a river as an estuary into which flow the Rivers Paraná and Uruguay. It is about a

hundred miles long and 56 miles wide. On its northern shore is Uruguay; to the south is Argentina, 2, 283; 4, 317, 393

Rio Dubida. See *Rio Roosevelt.*

Rio Grande is a river rising in the State of Colorado, flowing through New Mexico and so reaching the Gulf of Mexico. The port of Rio Grande do Sul is near the mouth of the river.

Rio Negro is a river of South America, a tributary of the Amazon, 4, 314

Rio Roosevelt. A river of Brazil named after Theodore Roosevelt, a President of the U.S.A. who was also a great explorer. The river was previously known as the Rio Dubida, or River of Doubt.

Rio Tinto is a river of southern Spain whose valley is the centre of a copper-mining district, 4, 136, 366; 6, 114

R.I.P. means *requiescat in pace, i.e.,* may he (or she) rest in peace.

Ripley is a town of Derbyshire engaged in the heavy industries and is 10 miles from Derby. It was a market town in the thirteenth century.

Ripon. A city of the West Riding of Yorkshire famous for its cathedral which took more than three centuries to build, being completed about 1520. It was restored in 1862–72. The city grew up round an abbey built in the seventh century.

Rip Van Winkle lived in the Catskill Mountains, New York State, and went to sleep for twenty years. He figured in the story by Washington Irving, 7, 273

Picture: Rip Van Winkle Returns, 7, 270

Risorgimento was the name given to a movement for Italian unity and independence. Its meaning is resurrection. The risings in 1848–49 failed, but after the Austrian war of 1859 the Kingdom of Italy was founded in 1861.

Rite. A formal act of religion, a ceremony or religious duty connected with worship. Baptism, confirmation, marriage and burial all have their special rites.

River Horse. Translation of the Greek word Hippopotamus, though the animal is more like a pig than a horse, 1, 71

River of Doubt. See *Rio Roosevelt.*

River of Good Tidings was the name given to the Zambezi by early Portuguese navigators, 2, 290

Picture: 2, 291

River Plate. See *Rio de la Plata.*

Rivers, Longest. See *Atlas Supplement,* end of this Volume.

Riverside. Name of a city in California, U.S.A., famous for its citrous fruits. A garden here has many sorts and sizes of cacti.

Picture: 1, 355

Rivets are used in the assembling of all steel structures, including shipbuilding. Mechanical riveters of many types are now in use, 6, 80

Riviera is the name given to districts that have a particularly sunny climate. Parts of the south coast of France are the French Riviera, of which Nice is a centre. There is also the Italian Riviera.

—the English Riviera is a term applied to parts of the western counties, 3, 42

—the French Riviera, 4, 148

Picture: 4, 138

Riviere, Briton (1840 1920). Well-known English painter, he was most successful in depicting animals.

Picture: 7, 121

Riyadh is one of the capitals of the kingdom of Saudi Arabia, 4, 205

Rizzio, David (1533–66). A musician from Italy who was secretary to Mary, Queen of Scots, 2, 152

Picture: Darnley's Plot to Kill Rizzio, 2, 151

Rjukanfos, The, 345 ft. in height, is a famous waterfall of Norway. It drives power stations, 4, 37

R.N. means Royal Navy.

R.N.R. means Royal Naval Reserve.

R.N.V.R. means Royal Naval Volunteer Reserve.

Picture: Badges of Rank, 9, 376

Roach. Common freshwater fish found in nearly all British rivers and throughout Europe north of the Alps. Of little value as a table fish it is popular with anglers as it often requires considerable skill to catch it, 8, 250

Special Colour Supplement: British Fresh Water Fishes, 8, *between* 256 and 257

Road Crane, Making a Miniature. An interesting model you can make for yourself. With *Diagrams,* 8, 372

Road of God. See *Via Dei.*

Roads. The history of our roads so far as Britain is concerned goes back to the Roman occupation. It is probable that they founded their roads on existing tracks but their roads were constructed with scientific skill and solid workmanship.

After the Romans left road-making decayed until the time of George III when men such as Telford and Macadam brought new methods into use. With the coming of motor transport the need for reconstruction of old roads and the building of new roads became urgent and the Government and local authorities are now responsible to a large extent for their upkeep.

—in the Middle Ages, 2, 116

—the stage coach vanishes, 2, 214

See *The Wonders of Modern Road-making,* 5, 35 *et seq.*; also *Questions and Answers,* 9, 396

Pictures: For Undeveloped Regions, 5, 37

Making the Great West Road, 5, 40, 41

Making an Irish Highway, 5, 40

The Birmingham-Worcester Main Road, 5, 41

A Modern Road in Surrey, 5, 42

Britain's New Motor Roads, 9, 395

Robert, Duke of Normandy, was the son of William the Conqueror and so brother of William Rufus and Henry I. A rebellion in his favour had been put down in England in 1088, but in 1101 he invaded England. Later Henry I invaded Normandy and defeated Robert, 2, 96, 97

Robert II, King of Scotland (1316–90) a grandson of Robert the Bruce. One of his daughters married Sir John Lyon, founder of the ancient and honourable family of our Queen Mother, 2, 244

Roberts Mountain is a peak of Alaska near the town of Juneau. It contains gold, 4, 296

Roberts, Sir Charles G. D. (1860–1943). Famous Canadian author and poet, probably best known for his nature stories, 7, 239

Roberts, Sir Frederick Sleigh, First Earl Roberts of Kandahar (1832–1914). He was a great British soldier, seeing service in the Indian Mutiny and the Afghan Campaign of 1880. Commander-in-Chief in the South African War, he died whilst visiting Indian troops in France during the war of 1914–18.

Picture: 2, 236

Robert the Bruce. See *Bruce, Robert.*

Robespierre, Maximilian (1758–94). One of the leaders of the French Revolution, he was guillotined with a number of his followers, 2, 410

Robin. Well-known bird belonging to the thrush family and a popular songster to be found in most gardens. It is a partial migrant, 1, 163, 191. (*p.h.*)

Pictures: Robin's Quaint Nest, 1, 164

The Robin, 1, 191

Special Colour Supplement: British Wild Birds, 1, *between* 160 and 161 (Plate 3)

Colour Plate: British Birds' Eggs, 6, *facing* 396

Robin Flower is the name often given to *Red Campion* (*q.v.*).

Robin Hood. Hero of romantic stories in old English ballads and songs. He was an outlaw and head of a band which lived in Sherwood Forest. A wonderful bowman, he robbed the rich and gave to the poor. It has been claimed that he was the outlawed Robert, Earl of Huntingdon, but there has never been any proof of this.

One of the more recent versions of the story is Tennyson's poetic play *The Foresters* in which Robin Hood and Maid Marian play the leading parts, with Friar Tuck, Will Scarlet and Little John as members of Robin's band, while Richard Cœur de Lion brings pardon and a happy ending. (*p.h.*)

Pictures: 10, 323

Robinia. See *False Acacia.*

Robinson Crusoe, first published in 1719, was the work of Daniel Defoe. It is supposed to have been inspired by the life of Alexander Selkirk on the island of Juan Fernandez, though the original of the island described is Tobago, 3, 398; 7, 200, 271

—Defoe's book was written during the reign of George I, 2, 180

Pictures: Robinson Crusoe Explaining the Scriptures to Friday, 7, 200

Daniel Defoe in the Pillory, 7, 201

Robot. A coined word first used by Karel Kapek in his play "R.U.R." (*Rossum's Universal Robots*) in 1921. It referred to an automaton in human form and has become a synonym for a person who has no interest outside his work which he performs in an untiring mechanical way.

Rob Roy was the sixth of the Waverley Novels by Sir Walter Scott.

Picture: 7, 207

Robson, Mount. See *Mount Robson.*

Roc. A large ostrich-like bird now

entirely extinct. In Oriental legend it is a bird of gigantic size and in one of the stories of Sindbad the Sailor (*q.v.*) it was a roc which carried Sindbad from an island on which he had been left.

Rochdale is one of the great textile towns of Lancashire about 11 miles from Manchester. It was here that the Co-operative movement was founded in 1844.

Roche, Alexander. A Scottish artist, he was a member of the Glasgow School, **7**, 105, 108

Rochester. A busy city of Kent standing on the Medway. It has a Cathedral and a Castle, **3**, 33

Rock. Geological term for certain hard masses of the earth's crust. The two main kinds are sedimentary and igneous. Sedimentary rocks are those formed from sediments deposited on the bed of the sea.
Igneous rocks originate from materials within the earth such as volcanic lava.
See *Where the Earth's Story is Written*, **1**, 42 *et seq.*; **9**, 316. See also *Rock Strata*.
Picture: McDonnell Ranges, Australia, **10**, 311

Rock Cress. Name often given to the plant Arabis and to Aubrietia.

Rock Dove. A pigeon-like bird found mostly on rocky coasts. It is about 13 in. in length with a wing-span exceeding 2 ft.

Rockefeller Center is in New York, U.S.A., and consists of twelve towering skyscrapers, the largest being seventy storeys high.
Pictures: New York by Night, **4**, 270
Looking up at the Rockefeller Center, **4**, 275

Rocket. A firework which has been known for many centuries and was probably one of the first missiles to contain gunpowder. As fireworks they are called sky rockets and burst at the top of their flight to send out a shower of coloured lights or stars. Ships carry alarm rockets while coastguards and lifeboats use rockets for carrying a line to a stranded vessel.
—rocket bombs were invented and first used by the Germans in the Second World War. The V2 rocket bomb first appeared towards the end of the war. They were launched from specially prepared sites in Northern France and Holland, attained a height of 70 miles and a speed of 3,000 miles an hour. Nearly 600 fell in the London area and did considerable damage before the advancing armies captured the sites, **2**, 255; **4**, 85
—the use of rockets to assist aircraft has been tried with satisfactory results. The possibility of exploring the universe by interplanetary journeys between the earth and the moon is being scientifically considered. Other experiments concerning the use of rockets are being carried out both by Britain and the U.S.A. A rocket range has come into experimental operation in Australia, as well as ranges in the U.S.A. and Russia. Other aspects of rocket flight are concerned with television and meteorology. See *Rocket Flight*, **5**, 241 *et seq.*; **7**, 414
Pictures: To Fly Faster Than Sound, **5**, 241
V2 Rocket Transformed for Peaceful Purposes, **5**, 243
Where the Space Flyers Hope to Land, **5**, 244
A Man-carrying Rocket, **5**, 245
A Station in Space, **5**, 246
Plan of a Modern Rocket, **5**, 247
Rockets Old and New, **5**, 248

Rocket. Name of a famous locomotive engine built by George Stephenson. It may be seen at the South Kensington Museum, London, **2**, 214
Picture: **5**, 125
Special Colour Supplement: Railway Engines, **5**, *between* 122 and 129 (Plate 1)

Rocket-driven Aircraft have great uses for military purposes The highest rates of climb have been done by rocket-driven machines, **5**, 238, 241
Picture: Faster than Sound, **5**, 241

Rock Flour is the name given to the material ground off rock surfaces by glaciers. Rock flour makes fertile soil, **3**, 64

Rock Goby. A variety of fish which has the power of attaching its eggs to the underside of stones.

Rockhampton is one of the chief ports of Queensland. It stands on the Fitzroy River and has a fine natural harbour.
Pictorial Map: **3**, 243

Rock-Hopper. A form of penguin found in the Antarctic. It is so named because of its habit of hopping from one rock to another.

Rock of Cashel, County Tipperary, Eire, is a place rich in historical ruins
Picture: **3**, 151

Rock Strata. Rocks made up of a series of layers, **1**, 42
Pictures: In a Cliff Face, **1**, 41
On the Welsh Coast, **1**, 40
Strata at Saundersfoot, **1**, 42
Strata in Ridges, **1**, 42

Rocky Mountain Goat, or Sheep. Name of a wild animal found in North America. It is more nearly akin to the antelope than to goats or sheep.

Rocky Mountains is the name given to a great range of heights in North America. The Rocky Mountains are part of the Western Cordillera which extends from Alaska in the north, through Canada and U.S.A. to the Isthmus of Tehuantepec in Mexico, **3**, 160; **4**, 266
Picture: In the Canadian Rockies, **5**, 5

Rod el Farag. This is the Egyptian "airport" used by flying boats and is on the Nile not far from Cairo,

Rodents. Animals having chisel-like teeth for gnawing. Beavers, squirrels, rats and rabbits belong to the rodents, **1**, 134

Rodeo is the name for an exhibition, contest, or entertainment, in which American cowboys and cowgirls display their skill at rough riding, roping and branding calves, and similar activities.
Pictures: Scenes at a Rodeo, **4**, 286

Rodin, Auguste (1840–1917). Famous French sculptor. His best-known works are "The Thinker" and the "Burghers of Calais," which is in Embankment Gardens at Westminster, **4**, 18

Rodney, Lord (1719–92), the British admiral, is famous for his defeat of the Spanish fleet off Cape St. Vincent in 1780, and two subsequent victories over the French, **8**, 8

Rodrigues is an island in the Indian Ocean belonging to Great Britain. It is about 320 miles from Mauritius of which it is a dependency.

Roe, Sir Alliott Verdon (born 1877). A pioneer among British aeroplane designers. In 1909 he made his first flight on a 9 h.p. triplane of his own design and in 1910 founded with his brother the Avro aeroplane works in Manchester. He built the first seaplane to rise from the water and the first cabin machine in 1912.
Picture: In Flight at Wembley Park, **5**, 182

Roebling, John A. A New York engineer, he devised a plan for spinning wire cables for suspension bridges, **5**, 47

Roedean is the name of a girl's School at Johannesburg, called after the famous school in Sussex.
Picture: **3**, 288

Roedeer, or Roebuck. A small species of deer living in woods. They are found in Scotland, and there are still a few colonies in English districts. The deer stands about 26 in. high at the shoulder and has short three-tined antlers rising almost vertically from the head which are shed in December. The ears are rather large and it has no tail, **1**, 104

Rogers, Samuel (1763–1855). Well-known English poet. He wrote *The Pleasures of Memory* and many poems relating to Italy.

Roland was a nephew of King Charlemagne. He figures in the great French poem *The Song of Roland*, **5**, 409; **7**, 125

Roland and Oliver, The Death of. From *The Song of Roland*, **5**, 414

Roller. Name of a family of birds, some of them like crows and others with gay plumage. They are so called from the curious way in which they roll when in flight. The name Roller is also given to certain varieties of tumbler pigeons.

Rollo was a leader of the Northmen or Normans and was known as Rollo the Ganger. He became the first Duke of Normandy and William the Conqueror was descended from him, **4**, 6, 33

Rolls, Charles Stewart (1877–1910). British engineer and airman, a pioneer in the development of the motor-car and later the aeroplane. He was killed while flying at Bournemouth.

Rolls-Royce motor cars are in the forefront of all such vehicles the world produces. They are manufactured at Derby and Crewe.
Picture: **5**, 175

Romance. A tale of surprising adventures. The earliest romance that we have is the *Odyssey* of Homer. In the Middle Ages many romances were written about knights and their adventures.
The romances of King Arthur and his

knights are the subject of Tennyson's *Idylls of the King*.
—Tales of King Arthur and the Round Table, **5**, 383 *et seq.*
—Tales from the Faerie Queene, **5**, 397
Romance Languages is the term used to describe those which are derived from the language of the old Romans: French, Italian, Spanish and Portuguese, **9**, 337
Roman Hippodrome is an ancient ruin to be seen at Constantinople. It was built for horse racing, **4**, 160
Roman Hyacinth. See *Hyacinth, Roman.*
Roman Occupation. The invaders remained in Britain for nearly 400 years, **2**, 81; **9**, 22, 24
—they were the first to use coal in these islands, **6**, 5
—the Roman invasion, **9**, 24
—Roman remains in Britain, **9**, 323
Pictures: The Coming of the Eagles, **2**, 79, 81
Julius Cæsar Comes to Britain, **9**, 22
A Roman Villa in Somerset, **9**, 23
Romanoff, Michael, was elected Tsar of Russia in 1613, after which time his family occupied the Imperial throne of Russia until 1917, **2**, 407
Roman Roads. The four great Roman Roads in England were Watling Street, from the Thames to the Dee; the Fosseway, from the Exe to the Wash; Icknield Street, from the Severn to the east coast; and Ermine Street, from the Thames to the Humber.
—the Romans were the first to realise the great value of roads, **5**, 35
Sketch Plan: **5**, 39
Romansch. An ancient language that is still spoken by a few people in the more remote parts of Switzerland, **4**, 53
Rome is the capital of Italy and the seat of the head of the Roman Catholic Church. It stands upon the banks of the River Tiber and is famous for its ruins of the ancient Imperial city, **4**, 151 *et seq.*
—foundation of Rome by Romulus, **2**, 47
—Rome saved by the sacred geese, **2**, 58
—Rome captured by the Allies (1944), **2**, 254
—the rise and fall of the Roman Empire, **2**, 402
Pictures: How the Geese Saved Rome, **2**, 61
Built by a Roman Emperor, **4**, 141
Ruins of the "Eternal City," **4**, 142
Outside the Pantheon at Rome, **4**, 143
Along the Appian Way, **4**, 144
The Forum of Cæsar, **7**, 295
Pantheon of Agrippa, **7**, 296
St. Peter's, Rome, **7**, 317
Special Colour Supplement: In Ancient Rome, **7**, *between* 336 and 337
Photo-tone Supplement: Land of the Eternal City, **4**, *between* 112 and 113
Rome of the North is the name sometimes given to Prague, the capital of Czechoslovakia.
Pictures: **4**, 91, 92, 93 and 94
Rommel, Field-Marshal Erwin (1891–1944). He was the most successful German commander in the Middle East during the Second World War. He was later recalled to Germany and was killed in Normandy in 1944, **2**, 252
Romney, George (1734–1802). Son of a small farmer in Lancashire, he became one of the most successful of English artists, **2**, 411; **7**, 79
Picture, **7**, 79
Romulus, in the legends of the Roman Empire was the founder of Rome, **2**, 49
—Romulus killed his brother, **2**, 50
Pictures: Discovered by a Wolf, **2**, 49
Meeting with Silvia, **2**, 50
Romulus and Remus, The Story of. Telling of the Wolf who brought up these brothers and how Rome was founded, **2**, 47
Romulus Augustus was the last Roman to bear the title of Emperor. He was deposed by the barbarian leader, Odoacer, in A.D. 476.
Ronaldsay. Name of two of the Orkney Islands. North Ronaldsay is about three miles in length and has a lighthouse. South Ronaldsay has some interesting remains of the homes of the Picts. Sometimes spelt *Ronaldshay.*
Roncesvalles. Small town of Spain. Here the rearguard of Charlemagne was routed by Roland.
Rongbuk is a glacier of the Himalayas. It formed the base camp of the Everest Expeditions, **3**, 350
Rongbuk Monastery is in Tibet. It guards the approaches to Mount Everest **3**, 352
Rongotai is an airport near Wellington on the North Island of New Zealand, **3**, 272
Röntgen, William Konrad (1845–1923). A German professor, he discovered X-rays in 1895, **6**, 227; **7**, 386
See *The Wonders of X-Rays*, **6**, 226 *et seq.*
Rook. One of the commonest members of the Crow family. Black plumage and having a bare face, it lives in colonies in the tree tops. It uses the same nest several years in succession.
Special Colour Supplement: British Wild Birds, **1**, *between* 160 and 161 (Plate 2)
Colour Plate: British Birds' Eggs, **6**, *facing* 396
Rooke, Sir George (1650–1709). An English naval commander, he captured Gibraltar in 1704 with Sir Cloudesley Shovel, **2**, 177
Roosevelt, Franklin Delano (1882–1945). Governor of New York, in 1933 he became President of the United States. Proved himself a tower of strength in his leadership in the Second World War and was elected for a fourth term. His sudden death in April, 1945, was a great loss to the Allied nations—in particular to Great Britain to whom he had pledged American help in the dark days when Britain stood alone. He was succeeded by H. S. Truman (*q.v.*), **2**, 252 *et seq.*
Picture: Great Leaders Meet, **2**, 253
Roosevelt. Name of the ship especially built for Commander Peary's attempts to reach the North Pole, **2**, 358
Roosevelt, Theodore (1858–1919). He was President of the United States from 1901 until 1909. He was a world famous statesman and an intrepid explorer. The Rio Roosevelt in Brazil is named after him, **2**, 225
Roosevelt Dam, blocking the Salt River in Arizona, is one of the most wonderful of such structures, **5**, 84
Root-Pruning. A system of shortening the root-growth of apple, pear and similar trees so that they may be made more fruitful, **1**, 282
Roots of Trees and Plants. All about them; how they grow and what they mean to plant life, **1**, 275 *et seq.*
Roots Useful to Man include potatoes, carrots, turnips, beetroot, etc., **1**, 277
Roquefort. A village of France which is famous for its cheese made from sheep's and goats' milk. It has been considered a delicacy since the first century when the Romans were in France.
Rorke's Drift, a ford on the Tugela River of Natal, was the scene of a famous battle in the Zulu War of 1879, **3**, 310; **9**, 329
Rorqual. A species of whale. Its mouth is so equipped that it can strain its food from water. The animal may be as much as 70 ft. in length. Small rorquals are found in British waters. The blue whale belongs to this family and is the largest whale known, sometimes attaining a length of 100 ft.
Rosario is a great river port and city of the Argentine. It stands on the River Parana and is a most important centre of commerce. Wheat, hides and linseed are among its chief exports.
Rosario Mine is the most important silver mine of the republic of Honduras. It is at San Juancito about 20 miles from the capital, **4**, 303
Roscommon is an inland county of Eire, in the province of Connaught. Its principal river is the Shannon and it is a farming centre.
Roscommon is the county town.
Rose was a name used in olden times for many kinds of flower but is now used for the well-known English flower. The red rose is often worn on St. George's Day. See also *Wild Rose.* (*p.h.*)
Rosebay is another name for *Willow-herb* (*q.v.*).
Rose Du Barry is the name of a beautiful colour invented by the French artist Boucher. It is called after the Marquise de Pompadour, **7**, 66
Rosemary. A fragrant evergreen shrub. The leaves are sometimes used in cookery as a flavouring and it is also used in scent-making.
Rose of Sharon. See *St. John's Wort.*
Roses, Otto of. See *Otto of Roses.*
Roses, Wars of the. The conflict between the rival factions of York and Lancaster for the English crown in the fifteenth century. The Yorkists assumed the white rose and the Lancastrians the red rose as their respective emblems. The rivalry ended when Henry of Richmond, a Lancastrian, became Henry VII and married Elizabeth of York, **2**, 130, 135, 406
Picture: **2**, 136
Rosetta is the name of an Egyptian port on the Nile delta, **4**, 195
—near this town the famous Rosetta Stone was found in 1799, **9**, 337
Picture: A Stone Key, **9**, 335

ROBIN HOOD OF SHERWOOD FOREST



Hero of many ballads and stories, *Robin Hood* (see p. 320) became an outlaw and lived with his merry band in Sherwood Forest. He was famed for his wonderful skill as a bowman.



It was said that he was Robert, Earl of Huntingdon, who was driven from his lands by Prince John while King Richard was away. Robin beat off all attempts to capture him.



Maid Marian, daughter of Sir Richard Lea, was betrothed to Robin and joined him in the woods. King Richard, back from the Crusades, sought out both Robin and Marian's father.



Specially drawn for this work.

In the presence of Friar Tuck, Little John, Will Scarlett and Much the Miller's son, all members of the merry band, King Richard grants free pardon to Robin, who marries Marian.

Rosetta Stone. This stone was found near an Egyptian town on the Nile named Rosetta in 1799 by a French officer. It has inscriptions in hieroglyphic, demotic and Greek characters which supplied a key to the inscriptions on the ancient monuments of Egypt. The stone is now in the British Museum, **9**, 2, 337
Picture: A Stone Key, **9**, 335

Rose, White, adopted as the emblem and badge of the Yorkists in the Wars of the Roses, while the House of Lancaster adopted the red rose.
Picture. **2**, 136

Rose Window. Name given to a circular, stained-glass window, divided into sections like the spokes of a wheel and found in some cathedrals and churches.
Pictures: **7**, 304

Roskilde. A town of Denmark on the island of Zealand. It is the burial-place of Danish kings, **4**, 47

Ross is a town of Herefordshire, 12 miles from Hereford. It stands on the River Wye and agricultural implements are manufactured here.

Ross, James Clark (1800–62), nephew of Sir John Ross, discovered in the Antarctic Circle the region which he named Victoria. He attained, in command of the *Erebus* and *Terror*, to within 160 miles of the magnetic pole, **2**, 366

Ross, Sir John (1777–1856). A Scots sailor who reached the rank of rear-admiral. In 1829 he set out in a vain search for the North-West Passage; and, in his old age, undertook a search for Sir John Franklin.
Picture: The North-West Passage, **2**, 219

Ross, Sir Ronald (1857–1932). Born in India, he became a doctor and bacteriologist, serving in the Indian Medical Service. He discovered the malaria parasite in mosquitoes and did valuable work in the treatment of the disease. He was awarded a Nobel Prize in 1902, and was a distinguished writer in fields outside scientific studies.

Ross and Cromarty is the name of a county of Northern Scotland. The district is very mountainous, but sheep are reared in large numbers. Loch Maree is one of the lakes and the coast-line is rugged and beautiful. The county town is Dingwall.

Ross Barrier. This is the Great Ice Barrier reached by Sir James Clark Ross, the British explorer, during his exploration of the Antarctic (1840–42). On the verge of the Ross Sea, the barrier has an almost perpendicular wall of ice rising in places to several hundreds of feet, **2**, 366
Pictorial Map: **2**, 367

Ross Dependency. A great stretch of the Antarctic for which New Zealand is responsible, **3**, 274

Rossetti, Christina Georgina (1830–94). Sister of Dante Gabriel Rossetti, she was herself a poetess.
Poem: Who Has Seen the Wind? **9**, 105

Rossetti, Dante Gabriel (1828–82). A great poet and painter. He came of an Italian family but was born and lived in England, **7**, 93, 150
Picture: **7**, 90

Rossini, Gioacchino (1792–1868). One of the Italian musical composers who wrote a number of operas, among them "The Barber of Seville."

Ross Island, is in the Antarctic, in the Ross Sea off the western shore of Victoria Land, **2**, 370
Photo-tone Supplement: The Volcano of Mount Erebus, **2**, *between* 368 and 369

Rosslare, County Wexford, Eire. A seaport which maintains a cross-channel service to Fishguard, **3**, 152

Ross Sea. The Ross Sea is a sheet of water in the Antarctic regions, partly bounded by King George V Land, Victoria Land, and King Edward VII Land, **2**, 368, 370
Pictorial Map: **2**, 367

Rostov-on-Don is a great industrial city and important transport junction of the Soviet Union. It is noted for agricultural machinery and has tobacco factories, **4**, 112

Rotation is the act of turning round or revolving. Brakes are used to stop the rotation of a train's wheels. The seasons come to us in a regular rotation, or recurring order.

Rotation of Crops means, broadly, not sowing any crop twice running on the same plot of ground. It is a gardening and farming term, **6**, 385

Rothamsted. A pioneer agricultural experimental station, near Harpenden, Herts. It was founded by John Bennet Lawes (*q.v.*) in 1843 and with him was associated Joseph Henry Gilbert (*q.v.*). From its beginning until the present day important experiments and research work on soil fertility and diseases attacking wheat, barley and other crops, have been carried out, **1**, 391
Pictures: At Britain's Pioneer Experimental Station (Insectary), **1**, 385
Experiments in Plant Growth, **1**, 391

Rothay is the name of a river in the English Lake District. It links the lakes of Grasmere and Rydal and joins the River Brathay, afterwards entering Lake Windermere, **3**, 89

Rothenburg. A picturesque old town of Bavaria, Germany, whose buildings seem to have changed little since the Thirty Years War when it was captured by General Tilly.
Pictures: **4**, 77 and 78

Rotherham is a town of the West Riding of Yorkshire standing on the River Don. It is interested in iron, steel and glass, **3**, 83
Picture: Rotherham Model Flying Club, **8**, 325

Rothesay is a favourite seaside and holiday resort on the Isle of Bute in the Firth of Clyde.

Rotomahana is a district of New Zealand which suffered greatly during the eruption of Tarawera Mountain, **3**, 260

Rotor. Name given to the revolving part of an electric motor or generator, steam or water turbine, or centrifugal pump.
Picture: **6**, 158

Rotorua is the principal centre of the thermal region of the North Island of New Zealand. It is famous for its hot springs and natural geysers, **3**, 258
Pictures: Steaming Mud Flats of Waiotapu, **3**, 254
A Geyser in Action, **3**, 255
A Mud Volcano in Wairakei Valley, **3**, 256
A Dinner Cooked in Natural Hot Water, **3**, 258
Photo-tone Supplement: New Zealand Scenes, **3**, *between* 256 and 257

Rotten Boroughs were towns which, although they had long ceased to have any importance, were represented in Parliament (*e.g.*, Old Sarum). These boroughs lost their representation under the Reform Bill (1832), **2**, 210

Rotten Row is the name given to a sanded roadway which encircles part of Hyde Park, London. It is used for the riding of horses.

Rotterdam is the principal port of Holland and a great commercial and manufacturing centre. It is on the River Maas, **4**, 31, 32, 69

Roubaix is a town of the Nord Department of France. It manufactures linens, woollens and cottons and has heavy industries, **4**, 13

Rouen, standing on the River Seine, is the capital of the Seine-Inferieure department of France. It is a great manufacturing and commercial centre and the city is famous for its Gothic Cathedral.
—Joan of Arc was burned in the market place 1431, **2**, 130
Picture. The Cathedral, **7**, 317

Roumania. See *Rumania.*

Roundheads. The name popularly given to the soldiers of Cromwell, **2**, 161; **9**, 326

Round Robin is the name given to a petition in which the names of the people who sign it are written round a circle so that no one name shall be the first, **9**, 361

Round Towers are a feature of the Irish landscape. They were built as places of refuge where the local people might resist pirates and robbers. One of the best preserved is on Devenish Island, Lough Erne, Fermanagh, **3**, 154
Picture: **3**, 151

Rousseau, Jean Jacques (1712–78). Famous French political writer and philosopher. His work paved the way for the French Revolution. His *Social Contract* is sometimes called "the Bible of the French Revolution," **2**, 409; **4**, 8

Rovings is a term used in cotton mills. It refers to cotton in the form of coarse, loose threads which have to be reduced in thickness and twisted many times before they are fit for the loom, **6**, 338

Rovuma is a river of East Africa, flowing near Lake Nyasa, **2**, 335

Rowallan, Lord, M.C. Elected Chief Scout by the Council of the Boy Scouts Association in 1945, in succession to Lord Somers. He served in each of the World Wars and has travelled widely to visit Scouts throughout the world.

Rowan. A tree often called the Mountain Ash though it has no relation-

ship with the Ash beyond the fact that its leaves bear some resemblance. Very hardy, it flourishes in high altitudes and poor soil, 1, 401
Picture: The Rowan and the Ash, 1, 398

Rowing. The propulsion of a boat by oars goes back to the earliest days of civilisation, and is today among the popular forms of recreation and sport in most countries. The earliest race as a sporting event in this country was for Doggett's Coat and Badge between Thames watermen in 1715. The University Boat Race was first rowed in 1829.
Picture: A Regatta on the Thames, 10, 317

Roxburghshire is one of the counties of southern Scotland. The Tweed, Teviot and Gala are three of its rivers and it is hilly in the south with peaks rising to 2,000 ft.
The county town is Jedburgh.

Royal Academy of Arts, was founded by George III in 1768. Sir Joshua Reynolds was its first President. It elects Academicians (R.A.) and Associates (A.R.A.) and its annual summer exhibition at Burlington House, London, is famous, 7, 77

Royal Air Force. An amalgamation made in 1918 of the Royal Flying Corps and other branches of the air service. There are now eight home commands, viz., bomber, fighter, coastal, flying training, technical training, maintenance, reserve, and transport. The Cadet College is at Cranwell, Lincs., 5, 205
—air warfare in the Great War (1914–18), 2, 238 239
—the Battle of Britain, 2, 250

Royal Border Bridge spans the Tweed near Berwick. It was designed by Robert Stephenson and opened by Queen Victoria in 1850.
Picture 3, 109

Royal Canadian Mounted Police are famous as guardians of law and order in the remoter parts of the Dominion of Canada.
Picture 3, 159

Royal Canal is the name of an inland waterway in Eire. It links the Shannon with Dublin, 3, 141

Royal Docks. Name given to the Royal Victoria, Royal Albert and King George V Docks of the Port of London, 8, 93; 8, 95
Pictures: London's Royal Docks from the Air, 8, 89
Docking at the End of the Voyage, 8, 97

Royal Exchange. Famous building in the City of London. From the steps of the Exchange State proclamations are made.
Pictures: The Royal Exchange, 3, 11
A Picture in the Exchange, 4, 338
The Golden Grasshopper, 10, 317

Royalist was the name of the vessel in which Sir James Brooke sailed east and visited Sarawak, 2, 326

Royal Jelly. Special food provided by honey bees for their queens; the eggs of queen bees are placed in specially large cells, 1, 760

Royal Liver Building, The. One of the landmarks of the great port of Liverpool. Its domes are crowned with figures of the mythical liver bird.
Colour Plate: One of Britain's Sea Gateways, 3, *facing* 85

Royal Mail Steam Packet Company. A shipping line founded in 1839. Its name was changed to Royal Mail Lines in 1932, 8, 32

Royal Marines. See *Marines, Royal.*

Royal Mile is the name given to the road between Edinburgh Castle and Holyrood Palace, 3, 116

Royal Military College, where cadets for commissions in the British Army are trained, is at Sandhurst, Berkshire.

Royal Mosque, The. This wonderful building is at Isfahan in Iran (Persia) and is also known as the Masjid-i-Shah Mosque. It was built during the reign of Shah Abbas.
Picture: 4, 203

Royal Navy. See *Navy, Royal.*

Royal Observatories are established at Greenwich, Edinburgh, Dublin and the Cape of Good Hope.

Royal Palm is the name of a stately tree, 100 ft. in height, that grows in many of the West Indian islands, 3, 397

Royal Society. An association of British scientists founded in 1645 which offers prizes for scientific and other learned discoveries. Membership of the Society (F.R.S.) is regarded as a high honour. Captain Cook led an expedition for the Society to the Pacific, 2, 179, 310; 7, 354

Royston is a town of Hertfordshire standing on the ancient main road known as the Icknield Way.

Rozier, Pilatre de. A Frenchman who made an ascent first in a captive balloon, and (in 1783) in a fire balloon, 5, 185
Picture: 5, 188

Rs. means rupees, a unit of money in India.

R.S.P.C.A. means Royal Society for the Prevention of Cruelty to Animals.

R.S.V.P. means *repondez, s'il vous plait,* reply, if you please. Used on cards of invitation.

Ruanweli Temple, at the sacred city of Anuradhapura in Ceylon, is some two thousand years old. Buddhists from all parts of the world contributed recently towards the cost of its restoration
Picture. 3, 367

Ruapehu is the name of one of the three volcanoes of North Island, New Zealand. It was thought to be inactive, but erupted in 1945, 3, 258
Photo-tone Supplement New Zealand Scenes, 3, *between* 256 and 257

Rubber, sometimes known as India-rubber or Caoutchouc, is the product of rubber trees from which the latex or sap is drawn. It is then cured. Rubber trees grow in the tropics and for many years Brazil was the chief source of supply. Today 75 per cent. comes from Malaya and the Dutch Indies. Ceylon, Siam, Indo-China and West Africa are also producers of rubber, as well as S. America, 6, 319 *et seq*; 9, 414
—Malayan rubber, 3, 401; 4, 374
—rubber from the Amazon country, 4, 316
Pictures: Drying and Packing Rubber, 3, 402
A Rubber-Planter's Home, 4, 364
Rubber for World Markets, 4, 365
Making a Rubber Plantation, 6, 319
Milking a Rubber Tree, 6, 320
A Plantation in Malaya, 6, 321
Rolling and Drying, 6, 322
Bringing Rubber to Market, 6, 323
Colour Plate. Tapping Rubber Tree, 6, *facing* 324
See also *Tyres.*

Rubber City of Malaya is the name given to Kuala Lumpur, capital of Selangor, Federated Malay States, 3, 402

Rubens, Peter Paul (1577-1640). One of the world's great artists and the first to produce landscapes, 7, 39
Pictures Rubens' "Rainbow Landscape," 7, 39
Rubens and his First Wife, 7, 41

Rubicon. Name of a river that divided Ancient Rome from the country of Gaul
—crossing the Rubicon, 2, 76; 9, 362
Picture 2, 76
Colour Plate: Julius Cæsar crosses the Rubicon, 2, *facing* 69

Rubislaw. This is the name of famous granite quarries at Aberdeen in Scotland. Aberdeen is often called "the granite city."
Pictures: Granite from Aberdeen, 3, 125

Rudbeckia. A hardy herbaceous perennial plant. Often known as the cone flower from the shape of its blossoms.

Rudder. A flat frame hinged to the sternpost of a vessel. It enables the one in charge to change the course of the vessel.
Pictures: Fixing a Rudder, 5, 280
Fifty-five tons of Rudder, 5, 281

Rue. One of the herbs It is used for seasoning and medicine is made from its leaves. The leaves are irritating to the skin, 1, 333, 348

Ruetli. This word means "hidden meadow." The meadow was one on the shores of Lake Lucerne in Switzerland and it was there, long ago, that began the resistance to tyranny which resulted in the birth of Switzerland. The men who began that resistance are known as the patriots of Rueth, 4, 56

Ruff. A snipe-like bird belonging to the sandpiper tribe The female bird is called a Reeve, in the breeding season the male wears a curious ruff round its neck.

Rufus Stone. Name of a monument in the New Forest set up to mark the spot where William Rufus was killed by a crossbow, 3, 38

Rugby is a town of Warwickshire, on the River Avon. It has important engineering shops and electrical works, as well as being a wireless transmitting station, 6, 216
Pictures: Linking the World, 6, 216
At Rugby Wireless Station, 6, 217
Tuning in at G.P.O. Station, 6, 218

Rugby Union is the controlling body for the Rugby game of football. It was founded in 1871, 2, 221; 9, 401
See *Football.*

Rugeley. A town of Staffordshire, standing on the River Trent. It is the centre of a coal and iron district.

Ruhr is the name of a river, a tributary of the Rhine The term also applies

to the district round about with giant town-clusters where iron and steel, dyes, chemicals and textiles are manufactured and a vast coal-field. The Ruhr was almost completely destroyed by heavy bombing during the war, but is now recovering under British supervision, 4, 80, 86 *et seq.*
Pictures: 4, 82 and 83

Ruisdael, Jacob van (1628–82). Great Dutch artist. His picture "The Mill" is specially well known, 7, 52
Picture: 7, 50

Rule, Britannia. Name of one of our national songs, composed by Dr. Thomas Arne.

Rum is a mountainous island of the Inner Hebrides, Argyllshire. It is 8 miles long and 7½ miles wide.

Rumania is one of the countries of south-eastern Europe. It is chiefly agricultural, but has oil, mineral, and timber industries which are now operated in collaboration with Soviet Russia. Bucharest is the capital. The population is about 16 millions, 4, 97, 102, 360
Pictures: Harvesting in the Valley of the Prahova, 4, 104
Rumania's Greatest Oilfields, 4, 352

Rumelia, Plain of. This is that part of the country of Bulgaria which lies between the Balkan mountains and the Rhodope mountains. It contains the richest farmlands Bulgaria has, 4, 96

Run and Fell Seam is used in needle-work, a start being made by tacking two pieces of material, 8, 410
Pictures The First Part of a Run and Fell Seam, 8, 409
The Finished Seam, 8, 409

Runcorn. A river port and town of Cheshire. It stands on the River Mersey and on the Manchester Ship Canal. The place is connected with Widnes by a transporter bridge, 9, 411
Picture: Crossing by Transporter Bridge, 9, 410

Running Toad. See *Natterjack.*

Runnymede. A meadow on the south bank of the Thames between Egham and Windsor. Here on June 19, 1215, King John consented to grant Magna Carta. The meadow and the island in the stream are now in the care of the National Trust, 2, 104; 3, 26, 412
Picture: 3, 409
Colour Plate: King John Sealing Magna Carta, 2, *facing* 101

Runway. A hard-surfaced track on an aerodrome which facilitates taking off and landing of aircraft. These runways are so arranged that planes can take the one most suitable from the point of view of the prevailing wind.
Picture: An Aerial View of London Airport, 5, 224

Rupert, Prince (1619–82). He was the nephew of King Charles I and led the Royalist cavalry during the Civil War. Later, during the reign of King Charles II he became the first Governor of the Hudson Bay Company. He died in 1682, 3, 156

Rural District Council. A body of men and women elected by the voters in each "rural district" to carry out certain duties of local government relating to public health and other matters, 9, 66

Rushmore, Mount. A height of the Black Hills which are partly in South Dakota and partly in Wyoming, U.S.A. It gives its name to the Mount Rushmore National Park. The rock face of the Mount bears some remarkable effigies of famous American national leaders.
Picture: 4, 282
Photo-tone Supplement: Famed in America's Story, 4, *between* 272 and 273

Ruskin, John (1819–1900). British Author. Born in Edinburgh, he was a master of pure and lucid English. He was a great idealist and full of reforming zeal. His *Seven Lamps of Architecture* ranks high among his works. He lived for many years at Coniston, 2, 221; 7, 367

Russell, Bertrand Arthur William (born 1872). Distinguished British philosopher and mathematician. Author of *The A.B.C. of Relativity, The Analysis of the Mind,* and other widely-read scientific works. Also popular broadcaster. Succeeded to earldom but has never used the title.

Russell Falls are in Hobart National Park, Tasmania, and are one of the sights of the island, 3, 235

Russell, John Scott (1808–82). A Scottish engineer and ship-builder. He was a pioneer of steam-driven road vehicles, 5, 165

Russell, Lord John (1792–1878). A famous Liberal statesman, who eventually became Prime Minister in 1865. He was largely responsible for the Reform Bill in 1831.
Picture: The Fight for the Vote, 2, 209

Russell Street is one of the most important thoroughfares in Melbourne, the capital of Victoria, Australia.
Picture: 3, 234

Russia, which is also called the U.S.S.R. (Union of Soviet Socialist Republics), has territories which cover one-sixth of the land surface of the globe and her peoples belong to more than 180 different nationalities. The U.S.S.R. came into being as a result of the Russian revolution of 1917 and at first consisted of the Russian Soviet Federal Socialist Republic, the Ukrainian Soviet Socialist Republic, and the republics of Byelorussia (White Russia), and Transcaucasia. Many other republics owing allegiance to the same political system were later admitted, and today there are nearly twenty such republics within the U.S.S.R., some in Europe and others in Asia. For the Soviet Union occupies over 8,700,000 sq. miles and has a total population of more than 193,000,000. The capital of this vast political unit is Moscow. See *Russia: U.S.S.R. in Europe and Asia,* 4, 105 *et seq.,* 359 *et seq.*
—invades Poland with Germany (1939), 2, 247
—attacked by Germany (1941), 2, 252
—declares war on Japan, 2, 257
—the revolution of 1917, 2, 412
—the Russian system of government, 9, 46
Pictures: The Dnieper Dam, 4, 105
The Red Square, Moscow, 4, 107
Hunters of the Siberian Taiga, 4, 108
Peoples of the Soviet Union, 4, 109
Part of Moscow's Underground Railway, 4, 110
The Cathedral of St. Basil, 4, 111
On the Longest European River, 4, 113
From Both Europe and Asia, 4, 114
Preparing for the Winter, 4, 115
A Crimean Rest Home, 4, 116
Iron and Steel Works, 4, 117
Lunch-time on a Collective Farm, 4, 119
In Two Soviet Republics, 4, 120
The Palace of the Soviets, 9, 47

Russian Turkestan. See *Soviet Central Asia.*

Russo-Japanese War (1904–5). This war was fought to decide whether Russian or Japanese influence should prevail in Manchuria. It resulted in the defeat of Russia, and the world of that time was surprised at the speed with which Japan won command of the sea in Far Eastern waters and scored a number of land successes, including the capture of Port Arthur, 2, 412

Ruthenia is a district of Czechoslovakia among the Carpathian Mountains.

Rutherford, Lord (1871–1937). Famous British scientist. He was a pioneer in the field of atomic research, 7, 378, 392, 403

Rutland is the smallest of the English counties, its area being only 152 square miles. Its chief river is the Welland, agriculture being the main industry. Oakham is the county town, and Uppingham is famous for its public school.

R.W.S. means Royal Society of Painters in Water Colours.

Ryal. Name of an old English coin worth about 10s. It was made of gold.
Picture: 4, 298

Ryan, Loch. A long arm of the sea leading up to the port of Stranraer. The loch is in Wigtownshire, Scotland.

Rybinsk is a large industrial town of the Soviet Union in the Moscow region, 4, 117

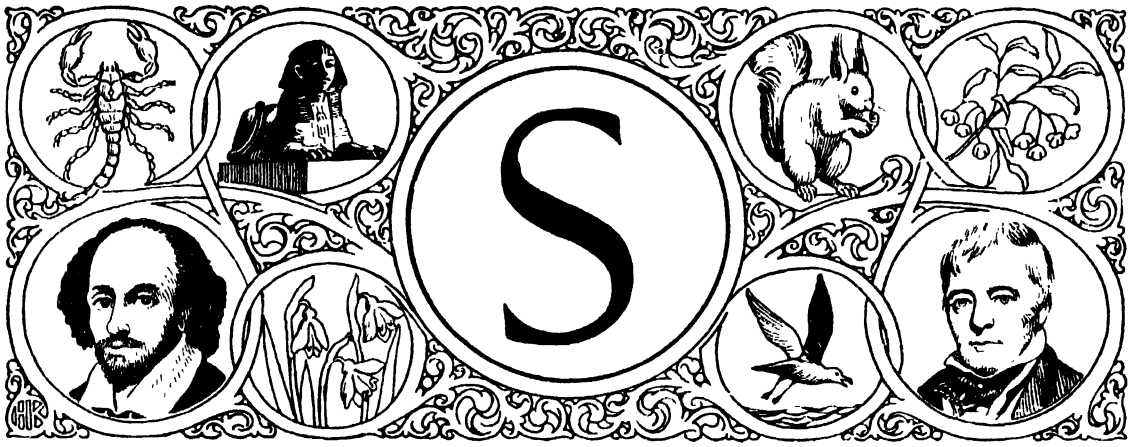
Rydal Water is the name of one of the lakes in the English Lake District. Nearby is the village of Rydal and Rydal Mount, where Wordsworth lived, 3, 88
Picture: 3, 91 and 92

Ryde. Town and holiday resort of the Isle of Wight. Port at which steamers from Portsmouth call, 3, 36
Picture: A Yacht Race off Ryde, 8, 103

Rye. An ancient and historical town of eastern Sussex. It is one of the Cinque Ports.

Rye. A cereal which is grown extensively in northern Europe. The flour is used to make the so-called "black" bread. In Britain rye is grown almost entirely as a forage crop for feeding animals in the spring.
Picture: Grasses Cultivated for Food, 10, 71

R.Y.S. means Royal Yacht Squadron.



S is the nineteenth letter of our alphabet, and is a sibilant, or hissing letter. We make much use of it, employing it, among other things, as the plural ending in most cases. Foreigners say that English people hiss when they talk.

S has two sounds : a soft sound, as in "sap" ; and a hard, or Z, sound, as in "nose." We find it followed by C in many words, the two being pronounced together like S alone, as in "scent," or like SK, as in "scanty" and "school."

Chemists use S as the symbol for the element sulphur. In abbreviations S stands for South, Ship, Society (R.S. = Royal Society) Salvation (S.A. = Salvation Army), and shilling.

Saar is the name of a river of France and Germany, a tributary of the River Moselle It gives its name to the Saar Valley, a great mining centre, **4**, 77

Saarbrucken is a German town on the River Saar. It is the centre of a big coal mining area and has important ironworks.

Sable is the name given to a small animal of the weasel family. It is found mainly in Siberia, its coat being of great value as fur.

Sabre-Toothed Tiger. See *Tiger, Sabre-Toothed*

Sackbut. A musical instrument which was the forerunner of the modern trombone Introduced early in the fourteenth century it became very popular and was used in many royal bands.

It should be mentioned that the sackbut of the Bible was not of this type but a stringed instrument.

Sachs, Julius (1832-97). A German botanist, he made important researches concerning the influence of light on plants and his *Handbook of Botany* (1868) became a standard work.

Sack Trees are found growing in the East Indies Their bark is useful for making cord and bags

Sacramento is a city of the U.S.A., capital of the State of California. It stands on the river of the same name. —its gold rush in 1848, **6**, 90

Saddleback or Blencathra, is the name of a peak in the Skiddaw group. It is 2,847 ft. in height.

Sadhus are religious mystics of India who wander from shrine to shrine, **3**, 358

Pictures: **3**, 318, 331

Saffron Walden is a town of Essex. The name Walden means wald dene, a village in a wooded valley. In olden days saffron (a flowering plant once cultivated for colouring and flavouring) was grown here.

Sagaing is a district of Burma, through which flows the great River Irrawaddy. The capital is a town of the same name.

Sagas are the stories and legends of old Norse families. kings and heroes, **9**, 338

Sage. A well-known herb, leaves of which are used for flavouring. The plant grows 2 to 4 ft. high and has blue flowers.

Sage, Wood. See *Wood Sage.*

Sagittarius, the Archer. One of the Signs of the Zodiac.

Sago is obtained from the starchy pith of certain kinds of palm-trees, **9**, 414

Sagres is a port of Portugal near Cape St. Vincent. It was here that Prince Henry the Navigator worked, **4**, 137

Saguenay is a river of Quebec, Canada, flowing into the St Lawrence. Its waters are harnessed by the great Shipshaw Dam to provide power for the huge plant of the Aluminium Company of Canada, **3**, 195

Pictures: **3**, 189, 194

Sahara is the name of the greatest desert in the world. It may be said to stretch almost from west to east across the north of the African Continent, occupying about 3,000,000 square miles, **4**, 195

Sahel. A region of central Tunisia, in north Africa, where olives are the main crop, **4**, 166

Sahyun is the name of a Crusader castle near Antioch in Syria, **4**, 190

Saigon is the chief town of Cochin-China in Indo-China. It is the French seat of government and is the largest town and port of Indo-China, **4**, 212

Sailing Boat, Model. How to make a model sailing boat, **8**, 356

Sailing Ships are always fascinating, and it is well to know the names of the various compartments, sails and parts, **5**, 252

Pictorial Diagrams: **5**, 252

Photo-tone Supplement Ships Today and Yesterday, **5**, *between* 272 and 273

Sailor Prince, Our. This was the affectionate term applied to Prince George, afterwards George V, **2**, 230

Sainfoin. A deep-rooted leguminous plant which is particularly suitable for grazing or making hay in many parts of Britain. It makes valuable fodder for cattle.

Picture : Experiments in Plant Growth, **1**, 391

St. Abb's Head is a Scottish headland on the coast of Berwickshire. It is over 300 ft. in height, **3**, 113

St. Agnes is a small town and port of north Cornwall, about nine miles from Truro.

St. Albans, known to the Romans as Verulamium, is in Hertfordshire It contains a beautiful cathedral, consecrated in 1115.

—scene of the first battle of the Wars of the Roses (1455), **2**, 135

Pictures. **7**, 303

St. Alfege, Church of. At this Greenwich church, General Wolfe, victor of the battle for Quebec (1759), was buried, **2**, 189

St. Andrew. See *Andrew, St.*

St. Andrews is a holiday resort and golfing centre of Fifeshire, Scotland. Its university was founded in 1411, **3**, 122

St. Angelo, Castle of. A famous old fortress in Rome on the banks of the River Tiber.

Photo-tone Supplement: Land of the Eternal City, **4**, *between* 112 and 113

St. Asaph is a city of Flintshire, Wales. It is famous for its cathedral which dates from the fifteenth century.

St. Aubert of Avranches built the first oratory on Mont Saint Michel, France, so fulfilling the command of St. Michael who there appeared to him in the eighth century

Colour Plate Mont Saint Michel, France, **4**, *Frontispiece.*

St. Augustine is a town in Florida, U.S.A., where stands the oldest house in the United States of America.

Picture: **4**, 265

St. Austell is a town of Cornwall closely associated with the china-clay indus-

try, with the tin-mines and with fishing, 3, 50

St. Bartholomew, Massacre of (1572). This occurred in Paris on August 24th. Great numbers of Huguenots (Protestants) were killed in Paris, which blood-thirsty example was afterwards followed in the French provinces, 2, 406; 4, 7

St. Basil, The Cathedral of. One of the most picturesque churches in the world. It is to be found at Moscow.
Pictures: 4, 107 and 111

St. Bavon was the patron saint of the city of Ghent where his cathedral, begun in 940, may be seen. At the Abbey of St. Bavon, John of Gaunt was born, 1340, 4, 24

St. Bénézet's Bridge is a famous ruined bridge over the River Rhone at Avignon, France. It is on this bridge that dancing has taken place for many years, giving rise to the famous French folk song *Sur le pont d'Avignon* (On the Bridge at Avignon).
Photo-tone Supplement: On the Seine and the Rhone, 4, *between* 112 and 113

St. Bernard. (1) A pass over the Alps from Switzerland into Italy, 4, 56
(2) The name of a Hospice in the Alps near the pass From the Hospice St. Bernard dogs go out into the snow to seek for anyone who may be lost.
Picture: 4, 58

St. Brandan was the name of a large island which early geographers believed to exist in the Atlantic Ocean, 2, 273

St. Christopher (third century). One of the Christian martyrs, he carried people across a river that was without a bridge. The name means "Christ-bearer."
Picture: 7, 32

St. Christopher. See *St. Kitts.*

St. Columba (521–597). He came from Ireland to Scotland with a band of monks and spread Christianity. His church and monastery were built on the Island of Iona, 3, 139
Picture 3, 139

St. David. See *David, St.*

St. Dubricius was the first bishop of Llandaff, near Cardiff, founding the see there between the years 500 and 540, 3, 98

St. Dunstan's is the name of a Welfare Hospital in Regent's Park, founded in 1915 by Sir C. Arthur Pearson, Bt., for British Servicemen blinded during military operations. It trains men in occupations and provides financial and other aid to those who have lost their sight in the country's service.

St. Etienne is a town of France, standing on the River Furens. It is a mining centre and has many other industries. Capital of the department of Loire.

St. Francis. Born about 1182, he went about preaching and was one of the most famous missionaries, noted specially for his love of dumb animals. He founded the Franciscan Order, one of its rules being that members shall be poor.
Pictures: The Church of St. Francis, 4, 147
In the Crypt of the Church, 4, 147
The Bewailing of St. Francis, 7, 1
St. Francis and the Birds, 7, 5

St. Gall is a province or canton of Switzerland. Its capital has the same name and is an important manufacturing centre, 4, 61

St. George. An island in the Bermuda group on which the first settlement was made about 1612. Many of the streets still bear the names they were given in the seventeenth century, 3, 387

St. George is the patron saint of England. He slew the dragon and then, according to legend, went about preaching Christianity, 9, 330. See also *The Fight with the Dragon*, 5, 405
Picture: 7, 33

St. George's Chapel, Windsor, was completed by Henry VIII. It has been the scene of many weddings, funerals and other royal events. Contains the stalls of the Knights of the Garter.
Colour Plate: The Home of England's Sovereigns, 2, *facing* 77

St. George's Day is observed on April 23rd, the day on which he was martyred. It is also the date of Shakespeare's death, 1616, and the anniversary of the historic British naval attack on Zeebrugge in 1918.

St. George's Mushroom. Name sometimes given to the *Fairy Champignon* (*q.v.*).

St. Giles's Cathedral, Edinburgh, dates back to the fourteenth century and John Knox preached within its walls. It contains the Chapel of the Knights of the Thistle.

St. Goar and St. Goarhausen are two townships of Germany, on the banks of the Rhine.
Picture: 4, 65

St. Gothard is the name of a famous pass of the Alps in Switzerland. The railway tunnel exceeds nine miles in length, 4, 64

St. Helena. A British island of the south Atlantic, famous as the place where the Emperor Napoleon spent his exile, 2, 207, 410; 3, 394
—it was visited by Vasco da Gama (1497), 2, 289
Pictures: The Prisoner of St. Helena, 2, 207
Where Napoleon Died, 3, 393

St. Helens, Lancashire, carries out dyeing for the cotton industry and is a great centre of glass manufacture, 3, 86

St. Helier, standing on St. Aubin's Bay, is the capital of Jersey, largest of the Channel Islands, 3, 52

St. Ives (Cornwall). A quaint fishing town on the northern coast of the county. It is also a centre of the mining industry, 3, 44

St. Ives (Huntingdonshire). A small market town on the River Ouse. It is an important agricultural centre.

St. James's Cathedral. See *Cathedral of St. James.*

St. James's Palace, London, is one of the royal palaces and dates, in part, from the times of King Henry VIII. King Charles I slept here on the night before his execution. For a long time the Palace was the London residence of the sovereign, and it still plays its part in state occasions, 2, 259

St. James's Park, London, is one of the royal parks of the Commonwealth capital.
Picture: 3, 12

Saint John is a port of New Brunswick. It is a winter sea-gate to Canada, 3, 161

St. John's is the chief town of Newfoundland and is noted for its harbour and fishing industry, 3, 161
There is also a town of St. John's in Quebec, Canada.

St. John's College, Cambridge, was founded by Lady Margaret Beaufort in 1511. Its old and newer buildings are linked over the River Cam by the "Bridge of Sighs."
Picture: 3, 67

St. John's Co-Cathedral is in Valletta, Malta. It was built with money provided by a Grand Master of the Knights of St. John and was begun in 1573.
Picture: 3, 389

St. John's Wort. Common name for the plant hypericum which bears showy yellow flowers, 1, 300, 304

St. John the Divine. He was the author of the Book of the Revelation which he is said to have written whilst living on the island of Patmos in the Ægean Sea, 4, 158

St. Kilda is a lonely uninhabited island far out in the Atlantic. It belongs to the Outer Hebrides, 3, 139

St. Kitts is a British island of the Leeward group in the West Indies It is noted for its sugar plantations. Sometimes called St Christopher.

St. Lawrence. A river of Canada, some 750 miles in length. It is ice-bound in winter, but is Canada's great water gateway during the summer, 2, 186; 3, 160 *et seq.*
—its exploration, 2, 294 *et seq.*
—its discovery, 2, 294, 3, 155
—St. Lawrence valley fruit and dairy farms, 3, 181

St. Leonards, Sussex. See *Hastings*

St. Louis. The fourth largest city in the U.S.A., it stands on the River Mississippi and is in the State of Missouri. It is one of the greatest commercial and manufacturing centres, 4, 293

St. Malo. A French town on the English Channel, it is a centre for the export of the produce of Normandy. From here sailed the navigator Jacques Cartier, 2, 294
Picture: 4, 14

St. Martin's is one of the islands of Scilly.

St. Martin's Church at Canterbury is associated with St. Augustine and the return of Christianity to England in A.D. 569, 2, 84

St. Martin's in the Fields. Famous London Church overlooking Trafalgar Square.
Picture: 3, 18

St. Martin's Place, Charing Cross, London. Here may be seen the monument to Nurse Edith Cavell (*q.v.*), 2, 237
Picture: 2, 237

St. Maurice is a Canadian river that flows through Quebec and is much used by lumbermen. It is a large tributary of the St. Lawrence, 3, 195
Picture: 3, 167

St. Mawes Castle (1542) is an interest-

ing feature of the small Cornish town of St. Mawes, 3, 49
St. Michael's Mount is in Mounts Bay, Cornwall. It consists of a tall rock with a castle at the summit and is a seat of the St. Aubyn family. The Mount can be reached by a causeway from the mainland at low tide.
St. Michel d'Aiguilhe is the name of a church built on a needle-like rock at Le Puy, France, 4, 16
Picture: 4, 14
St. Moritz is a touring and holiday resort of Switzerland. It is a noted centre for winter sports.
Picture: 4, 64
St. Nazaire is a town and seaport of France at the mouth of the River Loire. It has heavy industries, such as iron and steel. In 1942 the harbour was blocked by a British commando raid, during the German occupation.
St. Neots is a small town of Huntingdonshire, standing on the River Ouse.
St. Nicholas (fourth century A.D.) was the Bishop of Myra in Lycia and became the patron saint of Russia and of children, merchants and sailors. The custom of giving presents on his day, December 6th, was transferred to Christmas Day. Santa Claus is a corruption of his name.
Picture: Santa Claus on Horseback, 4, 28
St. Omer is a town of northern France. It has several manufactures. During the First World War the British Army G.H.Q. was at St. Omer from 1914–16.
St. Pancras is one of the London boroughs. It contains a portion of Regent's Park and the three great railway termini, Euston, St. Pancras and King's Cross.
St. Patrick is the Patron Saint of Ireland, 9, 330
St. Patrick's Cathedral, dating from 1190, is one of the famous buildings of Dublin, 3, 150
St. Paul is the capital of the U.S.A. State of Minnesota. It adjoins Minneapolis.
St. Paul de Loanda, or Sao Paulo de Loanda, is also known as Loanda and is the capital of the Portuguese colony of Angola, West Africa. It was visited by Livingstone, 2, 334
St. Paul's Cathedral, London, is the third cathedral church to stand on this site at the top of Ludgate Hill. The present building was designed by Sir Christopher Wren and built after the Great Fire of 1666. It was completed in 1710, 2, 169, 170
—the Cathedral was rebuilt largely with money raised by taxing coal, 6, 7; 7, 310
Pictures: Charles II and Wren at St. Paul's, 2, 167
A Tale of Two Cities, 2. 263
Sights and Scenes of London, 3, 8
The "Crown of London," 7, 312
How Chains Embrace the Dome, 7, 313
The Chains for St. Paul's, 7, 331
Photo-tone Supplement: Famed in England's Story, 2, *between* 128 and 129
St. Peter Port, a town and seaport, is capital of Guernsey in the Channel Islands, 3, 52
St. Peter's at Rome is the chief church of Roman Catholic Christendom, 4, 152
Picture: 7, 317
Photo-tone Supplement: The Continent of Europe, 4, *between* 112 and 113
St. Petersburg. See *Leningrad.*
St. Petroc was a Welsh saint who landed in Cornwall at Padstow, a place originally called Petrockstow
St. Pierre and Miquelon. A French territory off the coast of Newfoundland consisting of two groups of islands. The islands are barren and cod-fishing is the main industry
St. Piran's Church was buried beneath the sands for 1,200 years. It is near Perranporth, Cornwall, 3, 49
Saint Quentin, Battle of (1557) A victory won by King Philip II of Spain over the French. The battle took place on St. Laurence's day, and accordingly the Escorial built by Philip was dedicated to that saint.
Picture. 4, 130
St. Roch was the name of the Royal Canadian Mounted Police schooner which was the first ship to sail the North-west Passage from west to east, 3, 159
Saint-Saëns, Camille (1835–1921) A French opera composer, he wrote "Samson and Delilah." 7, 188
St. Swithin (died 862). He became Bishop of Winchester and a great builder of churches. It was in connection with the burial of his body in the cathedral that the superstition about forty days rain arose, 9, 416
St. Teilo was second Bishop of Llandaff, near Cardiff, taking over the see from St Dubricius about the year 540. His tomb may still be seen in the cathedral, 3, 98
St. Theresia, a port on the Rio Negro, in Patagonia
—here violets were found growing wild, 1, 338
St. Tudno's Well is a place of historic interest near Llandudno. It has the remains of earth dwellings, 3, 108
St. Ursula, daughter of a King of Brittany, she was persecuted by a pagan prince and went on a pilgrimage to Rome, 7, 12
Pictures The Martyrdom of St. Ursula, 7, 10, 11
St. Vincent is one of the Windward Islands in the West Indies. It produces cotton and sugar Kingstown is the capital, 3, 396
St. Vincent, Battle of. This engagement took place between the British and Spaniards in the neighbourhood of Cape St. Vincent, 1797. Nelson boarded the *San Josef* and received the sword of the vanquished commander, 2, 196
Picture: 2, 196
St. Vitus Cathedral is a great church in Prague and is said to have been founded by "Good King Wenceslas."
Pictures: 4, 92 and 93
St. Willibrord was an English missionary who founded the abbey at Echternach in the year 701 in the Duchy of Luxembourg. Each year a pilgrimage is made to his tomb by "dancing" pilgrims.
Picture: 4, 171
Sakai are people of Malaya, hunters and trackers. They still use blow-guns and poisoned darts, 3, 402
Sakhalin is an island off eastern Asia, separated from the mainland by the Gulf of Tartary. It was formerly owned partly by the Soviet Union and partly by Japan, but now belongs entirely to the Soviet Union, 4, 250
Saki is the name given to a family of monkeys found only in Guiana and the Amazon valley. They never live long in captivity.
Sakieh is the name used in Egypt for a primitive kind of water wheel, 4, 194
Sal is the name of a hardwood forest tree that grows in Northern India, 3, 348
Saladin (1138–93). Sultan of Syria and Egypt. He was opposed to Richard I at Ascalon, a battle of the Crusades.
—he built the city of Cairo, 4, 194
Picture: 2, 102
Salamanca is a province of Spain and the name of the capital of that province. The capital is a very ancient seat of learning Christopher Columbus here appeared before the Council of Salamanca, and it was at this place that Wellington defeated a French army under Marmont in 1812, 2, 205
—George Borrow at Salamanca, 2, 350
Pictures Christopher Columbus at the Council of Salamanca, 2, 273
Across the River Tormes, 4, 133
Salamander. An amphibian, related to the newts; lives in damp places, feeding on worms and insects It was formerly supposed that it could live in fire, and in heraldry it is shown as a four-legged creature, surrounded by flames.
Salamis. An island of Greece. Famous in history for the sea battle fought between Greeks and Persians, 480 B.C. in the Straits of Salamis, 2, 31
Pictures Morning of the Battle, 2, 32
Burning the Persian Ships, 2, 34
Salem. (1) Capital of the State of Oregon, U.S.A. (2) A district of Madras, Southern India, having a capital of the same name.
Salford. A large industrial town of Lancashire adjoining Manchester. It stands on the River Irwell and contains some of the docks of the Manchester Ship Canal.
Salina is the name given in South America to a salt desert, 4, 321
Salisbury, Frank O. (born 1874) British artist, famous for his pictures of ceremonial subjects.
Salisbury. Cathedral city of Wiltshire. It stands on the River Avon. Its old-time name is Sarum, 3, 36; 7, 300
—King Charles II and his Court went to Salisbury to escape the Plague, 2, 169
Photo-tone Supplement: Salisbury Cathedral, 2, *between* 128 and 129
Salisbury. The capital of Southern Rhodesia, in British South Africa, has a population of nearly 70,000 It is situated on the Mashonaland plateau, 3, 296
Salisbury Plain. Region of high chalk downs with many valleys mostly in Wiltshire. Much used for military manœuvres, 3, 33 and 36
Picture: 3, 40
Saliva, or "spit," is one of the digestive fluids. It acts upon our food as we chew it, 8, 220

Salivary. Relating to, or producing the digestive fluid called saliva. The chief salivary glands of the mouth are near the ears, under the lower jaw and beneath the tongue.
The action of chewing makes them deliver saliva into the mouth, to be mixed with the food and assist the digestion of it in the stomach.

Sallow. Name given to certain species of willow tree.
Picture: Beating the Sallows for Moths, **8**, 287

Salmon. Large food-fish inhabiting the seas and rivers on both sides of the Atlantic. They travel from the sea to rivers and lakes for the spawning season When first hatched the young fish are called *alevins*; after they begin to feed they are known as *smolts*, and then they are ready, at about 2 years old, for the journey to sea where they develop rapidly. On their return to the rivers in a year or two they are known as *grilse*. Some remain at sea longer and do not return to fresh water until they are adult salmon, **8**, 79

—the catching and canning of salmon forms one of the most important Canadian industries, **3**, 174
Pictures: The Great Salmon Industry, **3**, 171
Cooking and Canning, **3**, 172
British Columbian Salmon Harvest, **4**, 381
Sorting Salmon at a Canadian Cannery, **4**, 382
Salmon Fishing in Scotland, **8**, 80
Special Colour Supplement: British Fresh Water Fishes, **8**, *facing* 256

Salmon, Cornish. Name given to the fish pollack.

Salmon Peel. Another name for *Grilse* (*q.v.*).

Salonica, known to the Greeks as **Thessalonika,** is in the Greek *nomos* (prefecture) of Macedonia. This important seaport was a base for British and Allied forces in the war 1914-18 The name is sometimes used to indicate this war front, **2**, 238; **4**, 158
It is also spelt *Salonika*.

Salop means the English county of Shropshire.

Salote Tubou, Queen. Reigning sovereign of the Tonga Islands, the last surviving independent kingdom of the Pacific. She came to the throne in 1918.
Picture. **3**, 394

Salt. Chloride of sodium (NaCl) is essential to many forms of life, human, animal and vegetable. It is used as a preservative for meats and in the manufacture of butter, etc. It is also the basis for the manufacture of many other chemicals. Salt is widely distributed in nature and is found in sea water, as rock salt, or salt deposits, or in brine deposits and springs. The chief salt district in Britain is in Cheshire, but there are also deposits at Droitwich in Worcestershire, in Yorkshire and in Lancashire.
Northwich, Middlewich, Winsford and Nantwich are the main Cheshire salt towns and a big chemical industry has been built up in this area, **3**, 76

—Poland's remarkable salt mines, **4**, 128

—dissolved in water, salt is useful in First Aid as an emetic, **8**, 234

—how salt is obtained, **9**, 414
Pictures: In the World's Most Amazing Salt Mines, **4**, 126
Carved from Natural Rock-Salt, **4**, 128

Salta is a province of Argentina in the extreme north of that country Its capital of the same name has recently been linked with Antofagasta in Chile by a new Trans-Andean railway, **4**, 321

Saltaire. A town of the West Riding of Yorkshire. It is called after Sir Titus Salt who established factories here in 1853 for making alpaca.

Saltash is a Cornish town on the River Tamar about five miles from Plymouth.

Saltash Bridge crosses the River Tamar and was built in 1859 by Isambard Kingdom Brunel. It is more than 2,240 ft. in length, **3**, 46

Saltburn is a holiday resort and seaside town of the North Riding of Yorkshire.

Saltcoats is a seaside and pleasure resort of the Ayrshire coast. Up to about the year 1800 it had a considerable salt industry.

Salter. A person who salts goods, or who manufactures or deals in salt. Salters in London have their own livery company.
Picture: **10**, 161

Salt Lake. See *Great Salt Lake*.

Salt Lake City is the capital of the State of Utah, U.S.A. It is a large industrial and commercial centre, **4**, 273

Saltpetre. Nitrate of potassium. Large deposits of natural saltpetre occur in Peru.
This chemical is used in the manufacture of gunpowder and fireworks and for curing meat. It has the other name of nitre.

Saltus Teutobergensis. This is a wooded series of ridges in Germany between Hanover and Cologne known today as the Teutoberger Wald. Here Arminius, chief of the Cherusci, defeated a German army under Varus in A.D. 9, **4**, 72

Salutation. The opening words of a letter, "Dear ——", are known as the salutation, which differs in form according to the nature of the letter, whether formal or intimate, business or personal. Special salutations are customary when writing to persons of rank in Church or State, **8**, 186

Salvador. See *El Salvador*.

Salvage means the saving of property from destruction, the payment made for doing this. If a ship is found abandoned in mid-ocean and taken into port by another ship, the owner of the second can claim salvage from that of the first. Salvage can also be demanded for towing a disabled ship into safety.
Specially equipped vessels, called salvage ships or salvage lighters, are employed for raising sunken vessels. In London there is a Salvage Corps which assists the National Fire Service in extinguishing fires and rescuing property.

Sal Volatile is a stimulant and remedy for faintness. It may be used when rendering First Aid, **8**, 234

Salwen, or Salween, is a river of Burma. It flows from north to south and enters the sea in the Gulf of Martaban, **4**, 216

Salzburg is a district of Austria having much mineral and timber wealth as well as mineral springs. The capital is a place of the same name. Mozart was born in the city of Salzburg and an annual music festival is held in commemoration of his genius.

Salzkammergut. A beautiful region of Austria often called "the Austrian lake district," **4**, 91

Samarkand is one of the chief cities and district of Uzbekistan, one of the republics of the Soviet Union, **4**, 112

Samarra is a town of Iraq on the River Tigris and a place of pilgrimage for pious Moslems.

Sambhur. Name of a deer found in India It has very large antlers; also spelt Sambur, **3**, 321

Sambre is a river of France and Belgium. It unites with the Meuse, **4**, 24

Samlet is the term used to describe the fry or young of salmon

Samoa, or Navigators' Islands are in the Pacific Those islands east of longitude 171° west belong to the U.S.A. There is a naval base at Pago Pago, a harbour which nearly cuts in half the island of Tutuila, **4**, 294
Western Samoa is administered by New Zealand under United Nations trusteeship. Apia, on the island of Upolu, is the chief port.

Samos. An island in the Aegean Sea once ruled by the Tyrant Polycrates and now Greek territory, **2**, 10

Samoyedes are people of the Soviet Union. They live in Arctic regions, **4**, 108, 112

Sampan. A type of boat common in the Far East, especially in Burma, Malaya, and China
Picture **3**, 401

Sampiah is the name used in India for a snake-charmer.
Pictures. A Trio of Snake-charmers, **3**, 331
A Charmer of Snakes, **3**, 333

Sampler. Piece of embroidery, usually on canvas or silk, worked by young girls to show their skill in needlework. Samplers were very popular in this country from the seventeenth century onwards, but have largely died out in modern times. See *Embroidery*
Picture: An Eighteenth Century Sampler, **10**, 121.

Samrat Yantra. A giant sundial at the ancient observatory of Jaipur in India, **3**, 342

Samson Fountain stands in the main square of the Czech town of Budweiss.
Photo-tone Supplement: The Continent of Europe, **4**, *between* 112 and 113

San Antonio. A large town of Texas, in the U.S.A., it stands on a river of the same name. It is a great manufacturing centre and forms a market for cotton.

San Antonio was one of Magellan's

SEAGULLS AND SWANS



Fox Photos

There are about fifty species of *seagulls* (see p. 338) and the family includes gulls, terns, kittiwakes and skuas. Most of them have long and powerful wings; all are fine swimmers and fliers. In this photograph, taken at Mevagissey, Cornwall, the seagulls are competing against anglers, picking the bait from the hook before it enters the water or stealing the catch before the angler lands it.



Keystone

Every year the *swans* (see p. 365) and their cygnets on the Thames are rounded up by the swan-uppers and their ownership indicated. "Swan-upping" dates back to the time of Richard I. The Queen's swans are nowadays left unmarked; those belonging to the Vintners have two nicks cut in the bills and the Dyers have one. Only the Queen and these two companies have the privilege of owning swans on the Thames.

ships in his voyage to South America, 2, 282
Picture: 2, 283

Sanatorium is a place or building to which people go for the sake of their health; usually in a spot famous for its delightful climate, or perhaps near some health-giving springs of medicinal waters.
A hospital set apart for consumptive patients where they can spend most of their time in the open air is known as a sanatorium.

Sanchi is the name of a hill in Bhopal, India, famous for its ancient monuments, 3, 326

Sanctuary means a holy place; a building for religious worship; a place of refuge; shelter. The sanctuary of a church is the part of the chancel near the altar.
In the Middle Ages a criminal could take refuge in a church and claim sanctuary as long as he remained in it. At Ealing is the first bird sanctuary formed in England, a place where birds can nest and live quite undisturbed.

Sand on the sea-shore comes from fine particles of rocks ground up by the action of the waves, 9, 317

Sand, George (1804–76). Great French woman writer. This was her pen-name, her own name being A. A. L. Dupin, afterwards Dudevant, 7, 180

Sandal. A kind of shoe, consisting of a sole and straps for holding it on the foot. Sandals were the ordinary footwear of the ancients, and are still much used in Eastern countries, besides being not unknown to children in this country.

Sandalwood is very fragrant and fine-grained. It comes from a tree grown in the tropics, 3, 336

Sanday is the name of one of the Orkney Islands off North Scotland.

Sandbach is a manufacturing town of Cheshire. It is one of the salt centres. In the market place are two ancient crosses dating from the seventh century.

Sand Bear is the name given to a badger-like animal found in India.

Sandblast. A blast of steam or compressed air driving fine sand or steel shot against glass, stone or metal, to etch, clean or smooth it.
Sandblasting, the process of applying the sandblast, is now much used in the smoothing of castings and brazed joints. It is done in specially built chambers, and the workmen have their eyes and mouths protected by helmets, through which a strong current of fresh air is blown.

Sand-Dunes. Another name for Sandhills (*q.v.*).

San Demetrio. Name of an oil-tanker in the famous *Jervis Bay* (*q.v.*) convoy which was heavily shelled by a German pocket battleship, November 5th, 1940. It was set on fire and had to be abandoned, but, two days later, 16 of her crew in an open boat returned and boarded the ship which was still afloat. They put out the fire, and, without compass or chart, brought her across half the Atlantic to a British port.
Picture : 8, 40

Sanderling. A bird of the seashore and the estuaries of tidal rivers. Of ash-grey colour, it finds its food in moist sand.

Sand-Glass. A simple instrument which measured time by sand running through a narrow opening in a glass vessel. It was in use for long years on board ship. The sand-glass is still used today as an egg-timer.
Picture: The Sailor's Sand-Glass, 8, 28

Sand Goby is the name of a small fish which constructs a nest for its eggs.

Sandhills. Mounds of piled-up, drifted sand, often found on flat, exposed coasts, 1, 37

Sandhurst is a small town of Berkshire. Nearby is the Royal Military College.

San Diego is a seaport, manufacturing city and holiday resort of California.

Sand Lizard. Like the Common Lizard, but larger; coloured like sand and difficult to see, 1, 152

Sand Martin. Member of the swallow family, a summer visitor in this country. Nests in high sandy banks, 1, 164
—its eggs, 1, 171

Sand Models. See *Working Sand Models.*

San Domingo. See *Santo Domingo.*

Sandown. A holiday resort of the Isle of Wight six miles from Ryde.

Sandpiper is the name of a bird of the plover family. It visits this country. There are several varieties.

Sandringham. The name of the royal estate in Norfolk. King George VI was born at York Cottage, Sandringham.
—the scene of experiments in reclaiming land from the sea, 3, 68
Picture : 2, 223

Sandstone. Name given to rocks formed of wet sand under immense pressure, 1, 42
Picture: Footprints on sandstone, 1, 8

Sandviken. An important industrial centre of northern Sweden with sawmills. Pig iron is also produced here.
Picture: 4, 36

Sandwich is a town of Kent standing on the River Stour. It is one of the Cinque Ports of Kent.

Sandwich Islands were discovered by Captain Cook. They are now known as the Hawaiian Islands. See *Hawaii, Territory of.*

Sandy Cape is a promontory of the Pacific coast of Queensland, Australia. Off the cape, some fifty or so miles to the north, is Lady Elliot Island, the approximate beginning of the Great Barrier Reef, 3, 228

Sandy Hook is a promontory of the State of New Jersey, U.S.A.

San Fernando, standing on the Bay of Cadiz, is a port of Spain.

San Francisco is one of the great cities of California, U.S.A. It is a seaport and transport centre with many industries, being the principal business place on the Pacific coast, 4, 273
Photo-tone Supplement : Bridges Big and Little, 5, *between* 64 and 65

San José is the capital of the Central American republic of Costa Rica. Its population is over 65,000, 4, 305
Picture: 4, 307

San Josef. A Spanish man-of-war on board which Nelson received the sword of the Spanish commander in the Battle of Cape St. Vincent (1797), 2, 196

San Juan. A river of Nicaragua which flows into the Caribbean at San Juan del Notre (Greytown), 4, 304

San Juan is the chief town of Puerto Rico, an island of the West Indies which belongs to the U.S.A., 4, 296

San Juan. The capital of a province of the same name in the Argentine, South America. It is a centre of the wine industry.

San Juan del Norte. See *Greytown.*

San Marino. One of the oldest small and independent states of Europe. It occupies a tiny " island " of territory in Italy and claims to be a surviving fragment of the Roman Empire, 4, 172
Pictures: The Heart of a Little State, 4, 169
The Regents of San Marino, 4, 169

San Martin Fall is the chief cataract of the wonderful Iguassu Falls in South America.
Picture: 4, 325

San Remo, on the Gulf of Genoa, is a great resort of the Italian Riviera.

San Roque is the name of a cape of Brazil at the north-east corner of South America, 2, 281

San Salvador is the capital of the republic of El Salvador in Central America. It suffered severe damage by earthquake and the eruption of the nearby volcano of the same name (1927), 4, 303
Picture: 4, 303

San Salvador was the original name of Watling Island, 2, 278; 3, 395

San Sebastian is a Spanish seaport standing on the Bay of Biscay.

Sanskrit. An ancient language, not unlike Persian, in which some of the oldest books of India were written, 3, 311

San Sofia is the most wonderful building in the Turkish city of Istanbul. It was built over fourteen hundred years ago as a Christian church but was converted into a mosque after the Turks had taken Constantinople. It is decorated with wonderful mosaics, 4, 160
Photo-tone Supplement: The Continent of Europe, 4, *between* 112 and 113

Santa Ana is an important coffee centre in El Salvador on the Pan-American Highway. The mills here are among the most modern in the world, 4, 303

Santa Anna Mountains are in Trinidad in the British West Indies. At the foot of the mountains is the plain on which Port of Spain, the Trinidad capital, stands, 3, 398

Santa Claus. See *St. Nicholas.*

Santa Cruz. (1) Name of a province of Bolivia and of the capital of this province. (2) A town of California, on the coast, famous for packing fish and fruit. (3) The capital of the Canary Islands.

Santa Cruz. A river in southern Argentina. At its mouth is a town of the same name, and this is the centre of a sheep farming district. Darwin made an expedition up the river, 2, 345

Santa Fé is the state capital of New

Mexico, U.S.A. It has a population of over 20,000. The Santa Fé trail was the name given to the old route followed by gold seekers and pioneers from the eastern states and is much the same as the route followed by the present railway, **4**, 262

Santa Fé. Name of a province of Argentina and of its capital.

Santa Maria was the name of one of the ships of Christopher Columbus. In 1893, to mark the 400th anniversary of the discovery of America, a full sized model of this vessel was built in Spain and sailed across the Atlantic, **2**, 276
Picture. **2**, 275

Santa Maria is an island of the Azores group. It is an important refuelling point on the trans-Atlantic air route, **4**, 148

Santa Maria della Salute is the name of a 300-year-old church in the Italian city of Venice. Within the church are paintings by the great master, Titian.
Picture. **4**, 151

Santander is a province and port of the north coast of Spain from which iron ore is shipped, **4**, 136
Pictures. Painted by Cave-Dwellers, **7**, 2
A Prehistoric Work of Art, **7**, 3

Santiago was the name of one of Magellan's ships in the voyage to South America, **2**, 282
Picture. **2**, 283

Santo Domingo is another name for the West Indian island of Hispaniola discovered by Columbus in 1492. Its western part is the republic of Haiti, and its eastern part is the Dominican Republic. The capital of the latter was called Santo Domingo until 1936 when the name was changed to Ciudad Trujillo.

Santorin. A volcanic island in the Ægean with a remarkable harbour beneath whose waters there is still volcanic activity, **4**, 164 *et seq.*

Santos is the great coffee-exporting centre of Brazil, **4**, 311
Picture: **4**, 321

San Vicente is a town of Chile near the Bio-Bio River, **4**, 324

Sanzio, Raphael See *Raphael.*

Saone is a river of France, about 300 miles in length. It joins the Rhone at Lyons, **4**, 14

Saone-et-Loire is the name of a department of France. It is a wine-producing and also a manufacturing centre and has Mâcon as its capital.

Sao Paulo is a State of Brazil interested mainly in coffee, though it also produces sugar, tobacco and other crops. Its capital is a city having the same name, **4**, 312
Picture. **4**, 313

Sao Thomé is the name of an island in the Gulf of Guinea, noted for its fish market.

Saponine. A poison contained in the plant soapwort, **1**, 350

Sappers are soldiers of the Royal Engineers, **9**, 374

Sapphire. A transparent precious stone, bright blue in colour. Chemically, it is an oxide of aluminium, and differs from the ruby only in colour. The finest sapphires come from Siam (Thailand), Burma and Ceylon. See *Gem.*

Sappho (seventh century B.C.). A Greek poetess. Only about 500 lines of all she wrote remain to us, **7**, 120

Sara is the name given by Indians to the Hardinge Bridge crossing the River Ganges in India, **3**, 348

Saracen is the name given to those Moors and Arabs who had possession of the Holy Land during the Middle Ages and proved such powerful opponents to the Crusaders.
Picture. **2**, 102

Sarajevo, capital of Bosnia, a district of Yugoslavia. Here was assassinated the Archduke Francis Ferdinand, an event from which began the Great War of 1914–18, **2**, 233

Saratoga, in the State of New York, U.S.A., is where a British army under General Burgoyne surrendered to the American colonists during the War of Independence (1777), **2**, 194

Saratov is the name of a district of the Soviet Union and of an important town in that district on the Lower Volga. Natural gas is supplied from here to Moscow, 527 miles distant, **4**, 116

Sarawak. A British colony in northern Borneo. Its chief town is Kuching on the Sarawak River. The colony has a growing oil field at Miri and also produces rubber, timber, and gold. Sarawak was once the kingdom of the white rajahs, of which the first was Sir James Brooke. It was ceded to the Crown in 1946, **2**, 325 *et seq.*; **3**, 404
—it is also the name of the river upon which Kuching stands
Pictures. The Palace of Rajah Brooke, **2**, 325
A Scene in Sarawak, **2**, 326
Going to Fetch Water, **2**, 327
Kuching and the Matang Hills, **3**, 403
Unloading Cargo at Kuching, **3**, 404

Sardine. A fish of the pilchard family that is preserved in oil in large quantities.

Sardinia is an island of the Mediterranean belonging to Italy. Cagliari is its chief town, **4**, 154
Picture: **4**, 139

Sardis was once the capital of Lydia, of which Crœsus was king, **2**, 1

Sargasso Sea is a part of the Atlantic Ocean, noted for its calms and the accumulation of floating weed. Columbus was becalmed on the Sargasso, **2**, 276, **9**, 308

Sargent, John Singer (1856–1925). A famous Anglo-American artist, one of the greatest portrait painters of modern times, **7**, 102, 111
Pictures: The Children of Mr. Asher Wertheimer, **7**, 104
Miss Ellen Terry as "Lady Macbeth," **7**, 133

Sargon II (722–705 B.C.) was the king under whom ancient Assyria reached the zenith of her power, **9**, 14

Sari. A long piece of cloth, brightly coloured and often silk, which is worn by the women of India.

Sark. (1) Name of a small river of southern Scotland. For part of its length it forms the boundary between the sister countries.
(2) One of the Channel Islands situated east of Guernsey. Its port is Creux. Many of its feudal institutions are still retained, **3**, 52, 53
Picture: **3**, 52

Sarong. A piece of cloth which is worn, by simply draping it about the body, in countries of the East. In Ceylon both men and women wear the *sarong.*
Picture: **3**, 362

Saros was the name given by astronomers of Chaldea to the period of rather more than eighteen years during which eclipses of the sun and moon repeat themselves, **8**, 132

Sarsaparilla. The creeping roots of this West Indian plant are used in the making of a blood purifying medicine, **1**, 234
—it is obtained also in the Amazon country, **4**, 316

Sarsens is the name given to the pillar stones of Stonehenge, **7**, 280

Sarum. Name given to a Roman settlement in Wiltshire. Salisbury was in olden times called New Sarum, **9**, 312

Sas Bain Temple. This is one of the wonderful buildings to be seen in Gwalior, a large state in the Indian Union.
Picture. **3**, 328

Saskatchewan is one of the prairie provinces of Canada, crossed by the river of the same name. It is a great wheat-growing district and has Indian reserves. The word means "rapid river." Regina is the capital, **3**, 175
Pictures, No Room in the Elevator, **3**, 176
Cutting and Threshing Wheat, **3**, 214
A Mechanical Conveyor, **3**, 215
Towering Grain Elevators near Saskatoon, **3**, 178

Saskatoon is the second largest city in the province of Saskatchewan, Canada. It is an important communications centre and has large wheat elevators in its vicinity.
Picture. **3**, 178

Sassoon, Sir Philip (1888-1939). A great pioneer of civil flying and privately-owned aeroplanes, **5**, 203

Satellite is the name given to a heavenly body which is an attendant upon another heavenly body in space. For example, the moon is the earth's satellite. The word is derived from the Latin word *satelles,* an attendant, **8**, 133

Satin Bower-bird is a native of Australia. It decorates its nest or "bower" with blue and yellow objects—shells, for example. It is said that it dislikes anything red.
Pictures. **3**, 247

Satin Lock. One of the locks on Lake Michigan, U.S.A.
Picture: **5**, 55

Satin-Stitch, as used in embroidery, is best worked in silk or cotton. Padding improves it, **8**, 416
Picture. **8**, 415

Satire. A poem or other writing which holds people or manners and customs up to ridicule; sarcasm.
The famous satires of the Roman poet Juvenal pour scorn on the crime, vices and follies of the Rome of his time.

Saturn is the name of one of the nine planets in the solar system. It has ten satellites and a wonderful system

of rings. Saturn is 885,900,000 miles from the sun; 745,000,000 miles from the earth; 73,713 miles in diameter and just over nine times the size of the earth, **8**, 155
Pictures: Saturn, the Ringed Planet, **8**, 156
In the Planet's Shadow, **8**, 157
The Rings Fully Opened, **8**, 157
Saturn in Conjunction with the Moon, **8**, 158

Saudi Arabia. A kingdom of Arabia whose sovereign is also king of the Hedjaz (also spelt Hejaz). There are two capitals, the holy city of Mecca and Riyadh. Oil is one of the main products, **4**, 205 *et seq.*, 368

Sauerkraut. Pickling cabbage that has been preserved in brine. A popular dish in Germany.

Saundersfoot, Pembrokeshire. There is here a remarkable example of folded rock strata, which have been bent into the form of an arch.
Picture: **1**, 42

Sava is a river of Yugoslavia. It empties into the Danube at Belgrade, **4**, 93

Savannah, in Georgia, is one of the great cotton ports of the U.S.A., **4**, 292

Savannah. She was an early steam vessel and had crossed and recrossed the Atlantic by 1820, **5**, 122

Savernake Forest is part of the estate of the Marquis of Ailesbury, near Marlborough, Wilts.
Picture. **7**, 112

Savery, Thomas. In 1698 he invented a steam pumping engine, **5**, 117

Savoie is a department in the south-east of France. Its capital is Chambery.

Savonarola (1452–98). An Italian preacher and reformer, friend of Botticelli, **7**, 7

Savory is one of the herbs and thyme-like in its habit.

Savoy Cabbages form a most valuable green vegetable in autumn and winter.

Saw. An implement for cutting. It is made of steel and has a toothed edge. There are many types of saw for different purposes.

Sawfish. A large fish having its snout developed into a flat blade with saw-like edges, **1**, 219
Picture: **1**, 220

Saw-Fly. Name of a family of insects, some of them harmful in gardens. The female has a saw-like part to her body with which she prepares a place in a plant where she may deposit her eggs.

Saxhorn. This is a family of brass wind musical instruments giving a powerful tone and used in military bands. It dates from 1843, when Adolphe Sax in Germany adapted the valve system to the keyed bugle. See also *Bugle* and *Musical Instruments.*

Saxons. Originally inhabitants of part of Germany, the Saxons invaded England during the fifth and sixth centuries. The south-western coasts of Britain, since they were most exposed to these invasions, were known as "the Saxon Shore," **2**, 84, 403

Saxony is one of the states of south-eastern Germany. Dresden is the capital. At the end of the Second World War it came into the Russian Zone of Occupation, **4**, 84

Saxophone. This instrument has resemblances to the clarinet and also to brass wind instruments. It has a brass tube and a single-reed clarinet mouthpiece, with keys similar to those of the clarinet. In recent years it has become prominent as a leading instrument in dance orchestras. It takes its name from Adolphe Sax, its inventor. See *Musical Instruments.*

Sayers, Dorothy. A modern British writer, she is notable for her stories of Lord Peter Wimsey, but has also made a name as a writer of religious plays such as "The Zeal of Thy House" and "The Man Born to be King" (for radio), and volumes of essays, **7**, 266

Scabious. A hardy annual bearing flowers of pom-pom form, **8**, 278
Photo-tone Supplement: Through the Microscope, **9**, *between* 336 and 337

Scabious, Field. See *Field Scabious.*

Scafell, in the English Lake District, is 3,162 ft. in height, **3**, 90

Scafell Pike (3,210 ft.) in the Lake District is the highest peak in England.

Scahia is the name given to the southern part of Sweden which is rich farming country yielding fine dairy produce, **4**, 46

Scald Law is a peak of the Pentland Hills, Scotland, nearly 2,000 ft. in height.

Scale Leaves are coverings provided by nature for the protection of young buds.
Picture: **1**, 283

Scaling Tower. Name of a military appliance used in the early days of history for storming an enemy stronghold.

Scallop. A bi-valve mollusc having a ridged shell in yellow, pink or mauve, **1**, 228
Colour Plate A Collection of British Shells, **6**, *facing* 397

Scaly Ant-Eater. An animal found chiefly in Asia, its body covered with horny scales. Also known as the pangolin, **1**, 116
Picture: **1**, 117

Scandinavia. Name given to a peninsula in northern Europe, the word coming from Scandia, a portion of Sweden. Norway and Sweden are Scandinavian countries, and politically and culturally Denmark is usually included, **4**, 33 *et seq.*

Scarab Beetle. An insect with richly coloured wing sheaths. The ancient Egyptians wore gems in the form of a scarab beetle and they remained long popular as seals.

Scarborough is a favourite holiday resort in the North Riding of Yorkshire. It is also a fishing port, **3**, 84

Scarlatti, Alessandro (1659–1725). An Italian musical composer, he was a friend of Handel, **7**, 160

Scarlet Pimpernel. A wild plant bearing small red flowers which close up if the sun passes behind clouds. In this way they foretell rain.
Special Colour Supplement: British Wild Flowers, **1**, *between* 304 and 305 (Plate 4)

Scarpe is the name of a river of northern France. It flows into the Scheldt.

Scaup. A species of wild duck which is a winter visitor to Britain. It prefers salt water and is a typical diving duck, short and squat. It has a black, green-shot head and a distinct white bar on the wings, which are brownish in colour.

Scenario is the term used to describe the dialogue and instructions for a film as written by the author of the story which is to be photographed for the screen, **9**, 249

Scent. The making and using of sweet-smelling scents has been with us for many generations. There are a number of references to them in the Bible, and frankincense and myrrh were two of the gifts carried by the wise men to Bethlehem. The story of how scent is made, where it is made, how the flowers are obtained, and so on, is told in **9**, 237 *et seq.*
Pictures Harvesting English Lavender, **9**, 237
Laboratory where Perfumes are Made, **9**, 238
Grasse, Capital of World Perfumery, **9**, 239
Water for the Flowers of Grasse, **9**, 240
Harvesting Carnations at Grasse, **9**, 241
Distillation by Steam, **9**, 242
A Girl Worker in a Grasse Perfume Factory, **9**, 243
Essential Oils for the Perfume Maker, **9**, 244
Packers in a Lavender Perfume Factory, **9**, 245

Scent-Glands are found at the root of the tail of a fox. The animals are tracked by dogs because of this scent, **1**, 86

Scentless Mayweed is a common wild plant growing to a height of 1 ft. It bears small, daisy-like flowers.

Schaffhausen is the name of a province or canton of Switzerland and of its capital. In the neighbourhood of the town are the beautiful Falls of Schaffhausen, on the Rhine, **4**, 70

Scheidegg. The name of a small township in the Bernese Oberland. The name is also given to two mountain passes one of which goes from Grindelwald to Interlaken. The other (Grosse Scheidegg) takes one from Meiringen to Grindelwald.
Pictures: **4**, 63

Scheldt is a river of France, Belgium and Holland. It rises in France and empties into the North Sea, **4**, 26

Schenectady, on the River Mohawk, is a city of the State of New York, U.S.A.

Scheveningen. A seaside and holiday resort of Holland easily reached by steam tram from The Hague.
Picture: **7**, 53

Schiaparelli, Giovanni Virginia (1835–1910). An Italian astronomer who studied Mars in particular. He arrived at the conclusion that the markings on this planet indicate snow, open seas and canals, possibly artificial, **8**, 142

Schickard is the name given to a plain on the surface of the moon 133 miles in diameter. There are two other wide plains, Grimaldi, and Clavius, which are respectively 138 and 142 miles in diameter, **8**, 138

Schiller, Johann Christoph Friedrich von (1759–1805). German poet and dramatic writer, **7,** 174

Schiphol is the name of the airport near Amsterdam in Holland. It is an important European crossroads of the air, **4,** 32

Schizanthus. Pretty half-hardy annual often known as the butterfly flower because of the shape of its blossoms

Schleswig-Holstein. Schleswig and Holstein were two duchies or southern provinces of Denmark, but Holstein was also within the German Empire. By cunning diplomacy, Bismarck won both of them for Prussia, **4,** 76

Schloss Stolzentels is a castle built beside the River Rhine. *Schloss* is a German word meaning "castle" *Picture* **4,** 67

Schmidt, Professor Otto I. He commanded four Soviet aeroplanes that made a successful landing at the North Pole in 1937, **2,** 365

Schneider Trophy was the prize for races for seaplanes. In the last of the series a speed of 407 miles an hour was reached. The trophy was finally won outright by Britain in 1931, **5,** 206; **9,** 402
Pictures. The Winning Machine in 1927, **5,** 201

Scholarship. A grant made to a student at school or college to reduce the cost of education. Most scholarships are awarded after an examination to those who do best
The word has a second, and quite different meaning—a good knowledge of literature, especially ancient Greek and Roman literature

School. In the earlier days of the ancient Greek civilization Greek youths of the citizen class received their education, as individual pupils, by visiting professional teachers of various subjects in their homes. At a later date Plato (428–348 B.C.) was the first Greek to establish a school, called the Academy. From its beginnings in Greece the school survived as an institution through Roman times, and was developed during medieval times by the Church. It changed its character and extended its influence as time went on until it became the indispensable institution we know today.
During the centuries school buildings have gradually changed from simple rooms or ecclesiastical buildings to the elaborate structures of today, and the changes have been greatest during the last century. Before the passing of the Elementary Education Act of 1870 the standard of school buildings available for the population generally was very low. In many cases three or four large classes were held at the same time in one room or hall, and dark classrooms and the absence of good playgrounds were common. After 1870 many improvements were made, and further developments are planned under the last Education Act (1944).
—in the Middle Ages, **2,** 134
—in the reign of William IV, **2,** 211
—in Queen Victoria's reign, **2,** 216–217
—schools in China, **4,** 206
—school stories for boys and girls, **7,** 272,
—Schools in Babylon, **9,** 13
Pictures: Athenian Boy at School, **2,** 20
Eton College, **3,** 87
When the School Comes to the Children (Canada), **3,** 195
An Australian School at Alice Springs, **3,** 225
Scenes in a Native College (South Africa), **3,** 287
Roedean Girls' School, Johannesburg, **3,** 288
Schools in India, **3,** 321, 333
Going to School in Lapland, **4,** 52
A Modern School in Warsaw, **4,** 125
A High School, Japan, **4,** 258
The Library, High School, Richmond, Yorkshire, **7,** 208
Harrow and Rugby, **10,** 343
Photo-tone Supplements. Modern Architecture (Bedford Girls' Modern School), **7,** *between* 288 and 289
The Boy Through the Ages (Roman School in Britain), **8,** *between* 368 and 369

Schooner is the name given to a sailing ship with two or more masts and fore-and-aft rigging. Some carry a square topsail on the fore-mast.

Schopenhauer, Arthur (1788–1860). A German philosopher, he was born at Dantzig. His writings, though pessimistic, had considerable influence on German thought.

Schubert, Franz Peter (1797–1828). An Austrian musician. He is best remembered as a writer of songs, of which he wrote nearly 300, **7,** 170
Pictures: From the Score of "The Unfinished Symphony," **7,** 169
The Composer Among his Friends, **7,** 170, 171

Schubertia. A plant, native to Brazil. The petals of the flower have a resemblance to the face of an old man.
Picture **1,** 366

Schumann, Robert (1810–56). One of the best-known German composers, he wrote beautiful and romantic music for the piano, **7,** 177
Picture **7,** 172

Schuty. A type of craft used on the canals of Holland, **4,** 30

Schwabe, Samuel Heinrich (1789–1875). A German astronomer who made a very close study of sun-spots, **8,** 122

Schwarzwald Cottages are humble dwellings with thatched or shingled roofs found in the Black Forest region of Germany, **4,** 87

Schwyz. A canton or province of Switzerland and one of the oldest. It joined with two others, Uri and Unterwalden, in 1291, **4,** 56

Science means systematic or organised knowledge dealing with the physical universe and includes such sciences as astronomy, mathematics, chemistry, physics, etc. Its history and progress through the centuries, including recent inventions and future developments, is dealt with in *Great Thinkers of All Nations,* **7,** 339–416

Science and the Future. This section of vol. 7 deals with the most recent discoveries of science and their application to the life of today, especially in the medical and industrial fields, **7,** 408 *et seq.*
Pictures: A Pupil at the Radar Research Centre, **7,** 408
Science Aids the Cotton Industry, **7,** 409
Measuring and Testing Screw-threads, **7,** 411
Measuring to Within a Millionth Part of an Inch, **7,** 413
The Electron Microscope, **7,** 415

Science Comes to the Farm. The story of the wonderful aid science gives to agriculture, **1,** 385 *et seq.*
Pictures At Britain's Pioneer Experimental Station, **1,** 385
A Threat to our Food Crops, **1,** 386
Hastening the Growth of Seeds, **1,** 387
In Market Gardens and Orchards, **1,** 388
Fighting Crops and Pests, **1,** 389
A Gas Attack on an Old Enemy, **1,** 390
Experiments in Plant Growth, **1,** 391
Watering the Thirsty Orchards, **1,** 392
Swanley Horticultural College Laboratories, **1,** 393
Spraying Fruit Trees, **1,** 394

Science Museum. One of London's museums, situated in South Kensington (*q.v.*) It contains among its many exhibits both working models and the originals of many famous engines, **5,** 122

Scilla. Name of a family of bulbous plants. One of the best-known is *Scilla nutans,* the common bluebell.
—*S. Sibirica,* with china blue flowers, is known as the Siberian squill.

Scilly Islands. Part of the county of Cornwall from the coast of which they are distant about twenty-five miles. St Mary's, Tresco and St Martin's are three of the islands, **3,** 42 and 46

Scindhia is the name of a famous ghat, or descent to the water, on the Ganges at Benares, **3,** 358

Scion. (1) The slip or piece of wood used when grafting a tree, **1,** 384
(2) A youthful member of a family.

Scipio Africanus (237–183 B.C.). The Roman general who destroyed the power of the Carthaginians, **2,** 71

Scipio the Younger (185–129 B.C.). A Roman general, he took the city of Carthage, **2,** 72
Pictures He Captures the Market Place, **2,** 72
Fighting on the Roofs, **2,** 73
Destruction of Carthage, **2,** 74

Scissel is a term applied to the strip of waste metal which leaves the press when "comage blanks," or embryo pennies, have been cut.
Picture **9,** 235

Scissor-Bill. See *Skimmer.*

Scone, in Perthshire, in remote times was the capital of the Picts. Here Scottish kings were crowned on the Scone Stone or Stone of Destiny. This stone was taken to Westminster in 1296 and has since been used as the Coronation Stone. It was stolen from the Abbey in December, 1950, and recovered April, 1951 (*pron.* Skoon), **2,** 113; **3,** 114

Scorpio, the Scorpion. One of the Signs of the Zodiac.

Scorpion. A creature something like a miniature lobster. It is found in Europe and the tropics and its tail carries a poisonous sting. (*p.h.*)

Scorzonera. Name of a vegetable cultivated for its parsnip-like root which is highly flavoured.

Scotch Thistle. One of the finest of British thistles and the badge of Scotland, **1**, 336, 351
Picture: **1**, 338

Scoter. The name of a wild duck which visits our shores during the winter. Both the beak and the plumage are deep black.

Scotland consists of the northern part of Great Britain and occupies an area of 30,406 square miles. It includes the Orkneys, Hebrides, Shetlands and other islands and is made up of thirty-three counties. It has four cities—Edinburgh, Glasgow, Aberdeen and Dundee and a population of nearly 5,000,000.
The country contains the Grampians and lesser mountain groups, with the Rivers Spey, Dee, Forth, Clyde, Tweed and Don. There are many lakes, the biggest being Loch Lomond. Agriculture is in most parts the staple industry, but there are rich coal-fields and vast enterprises in the extensive industrial districts. Scotland has four universities.
Edinburgh is the capital. Glasgow ranks as the largest city. Aberdeen and Dundee are important east-coast ports.
See *The Land of the Scots*, **3**, 109 *et seq.*

Scotland's "Third Verdict." In Scottish criminal trials the jury may bring in a verdict of "Not Proven" if they are doubtful on an issue, instead of being able to say only "Guilty" or "Not Guilty" as in England, **9**, 72

Scotland Yard is a building on the Thames Embankment which is the headquarters of the Metropolitan Police, **9**, 78, 82, 338
Pictures: The Fingerprint Department at Scotland Yard, **9**, 82

Scots. Name given to a race of Gaelic Celts who moved into Scotland from Ireland in remote times.
—they harry the English countryside, **2**, 82
Picture **2**, 82

Scots Pine. A tall, rugged tree of the conifer family which will grow in poor or sandy soil. It is native to these islands and should not be confused with a fir tree. It produces useful timber, **1**, 414
Pictures: **1**, 316

Scott, George, a draughtsman, he accompanied Mungo Park in the exploration of the Niger, **2**, 324

Scott, Sir George Gilbert (1811–78) was a most famous British architect. He designed the buildings of Glasgow University and the Albert Memorial in London.
Pictures. Glasgow University, **3**, 115

Scott, Sir Giles Gilbert, O.M. (born 1881). Famous British architect. His plans for Liverpool Cathedral were accepted when he was twenty-one.
See also *Liverpool Cathedral.*

Scott, Hugh Stowell (1862–1903). English novelist, he wrote under the name Henry Seton Merriman.
Author of *The Slave of the Lamp, The Sowers, Roden's Corner*, etc.

Scott, Robert Falcon (1863–1912). Born at Outlands, Devonport, he discovered in the expedition of 1901–03 the route to the South Pole. He followed this in a later expedition at the cost of his life and the lives of his party, **2**, 232, 370 *et seq.*, 412; **4**, 36
Pictures: Captain Scott Writing Up His Journal, **2**, 370
"Scott of the Antarctic," **2**, 373
Into the Blizzard of Death, **2**, 378
Where Scott of the Antarctic Trained, **4**, 35
Colour Plate: Captain Scott's Antarctic Ship *Discovery*, **2**, *facing* 305

Scott, Sir Walter (1771–1832). Great Scottish novelist, poet and historian. The *Lay of the Last Minstrel* was his earliest published work. His first novel was *Waverley*, **2**, 411; **3**, 117, 124; **7**, 204. (*p.h.*)
Pictures: Abbotsford, his residence, **3**, 111
The Lay of the Last Minstrel, **7**, 204
Sir Walter Scott, **7**, 205
Rob Roy and the Bailie, **7**, 207
Colour Plate: The Tournament at Ashby (Ivanhoe), **7**, *Frontispiece.*

Scott Country is the name given to that part of Scotland where Sir Walter Scott lived, *i.e.*, the district round Abbotsford, on the River Tweed, Melrose, etc.
Pictures: Abbotsford, **3**, 111
Melrose Abbey, **3**, 112

Scott-Hansen, Segard. He was in charge of weather observations in Nansen's Polar Expedition.
Pictures: At Supper in the Fram, **2**, 356
Scott-Hansen's Observatory, **2**, 357

Scottish Highlands. See *Highlands of Scotland.*

Scottish National Memorial to David Livingstone is at Blantyre, Lanarkshire.
Pictures: At the Scottish National Memorial, **2**, 331
Fighting for Freedom, **2**, 334
When Courage is Required, **2**, 335
The Last Days, **2**, 338

Scottish National War Memorial was erected at Edinburgh Castle to commemorate those who gave their lives in the First World War (1914–18).
Pictures: Our Soldiers' Humble Allies, **3**, 118
For Scotland's Fallen, **3**, 119

Scottish Terrier. Popularly known as the "Scottie," this is a breed of small, active dogs descended from Aberdeen terriers, **8**, 315
Picture: **10**, 111

Scottish Wild Cat. These animals still exist in the Highlands and are untamable, **1**, 59
Picture: **1**, 57

Scouring Machine is used in the woollen industry for washing and cleansing the wool, **6**, 364

Scouts, Boy. A great youth movement, organised by Lt.-Gen. (later Lord) Baden-Powell, beginning in 1907 with the first experimental Scout camp on Brownsea Island, near Poole, Dorset. On becoming a Scout a boy promises to do his duty to God and to the Queen, to help others at all times, and to obey the Scout Law.
Badges are awarded for proficiency in various activities including Lifesaving and Ambulance work. The highest Badge is the Queen's Scout Badge to gain which the Scout must hold various other Proficiency Badges including the Ambulance Badge and other Senior Public Service Badges, **2**, 226; **9**, 330
Picture: **10**, 55

Scow is the name given to a flat-bottomed boat, **3**, 174

Scrap of Paper was the term applied to a treaty between Germany and Belgium, disregarded at the outbreak of the Great War of 1914–18, **2**, 234

Screech Owl. Another name for the Barn Owl, **1**, 190. See *Owl.*

Scrub Turkey is one of the many unusual birds to be found in the Commonwealth of Australia, **3**, 256

Sculpture is the art of carving figures or other objects from stone, metal, wood or other solid material. The Egyptians were the first to develop the art both on a small scale as the little statuettes in pottery or wood to the huge carvings such as the Sphinx. The Assyrians developed their own distinctive style of statuary and bas-relief: scenes of war and hunting or statues of winged animals with human heads.
It was the Greeks who brought the sculptor's art to its perfection. Among their works which we regard as typical of their art today is the statue of Venus of Milo. Roman sculpture was at first entirely on Greek lines but later developed its own style. The art declined as the Roman Empire faded away but revived greatly during the Renaissance period. Among the greatest sculptors of that important period stands Michael Angelo.
In more modern times the famous sculptors have been Rodin, Epstein, Reid Dick, Dobson, Eric Gill, and among the very modern, Henry Moore.
—Michael Angelo's wonderful modelling, **7**, 16
—how statues are made in marble and bronze, **9**, 341
—the Elgin Marbles, **9**, 341
—the world's largest statue, **9**, 341
Pictures: Statue of Liberty, **4**, 273
A Statue of Moses, **7**, 17
A King's Statue, **9**, 8
Assyria's Warrior King and Sportsman, **9**, 11
Tribute to a Mighty King, **9**, 13
Three Gods of Greek Mythology, **9**, 16
Statue of a Lady, **9**, 21
A Priest of Rome, **9**, 21
From Old-time Ruined Cities (Mexico), **9**, 28

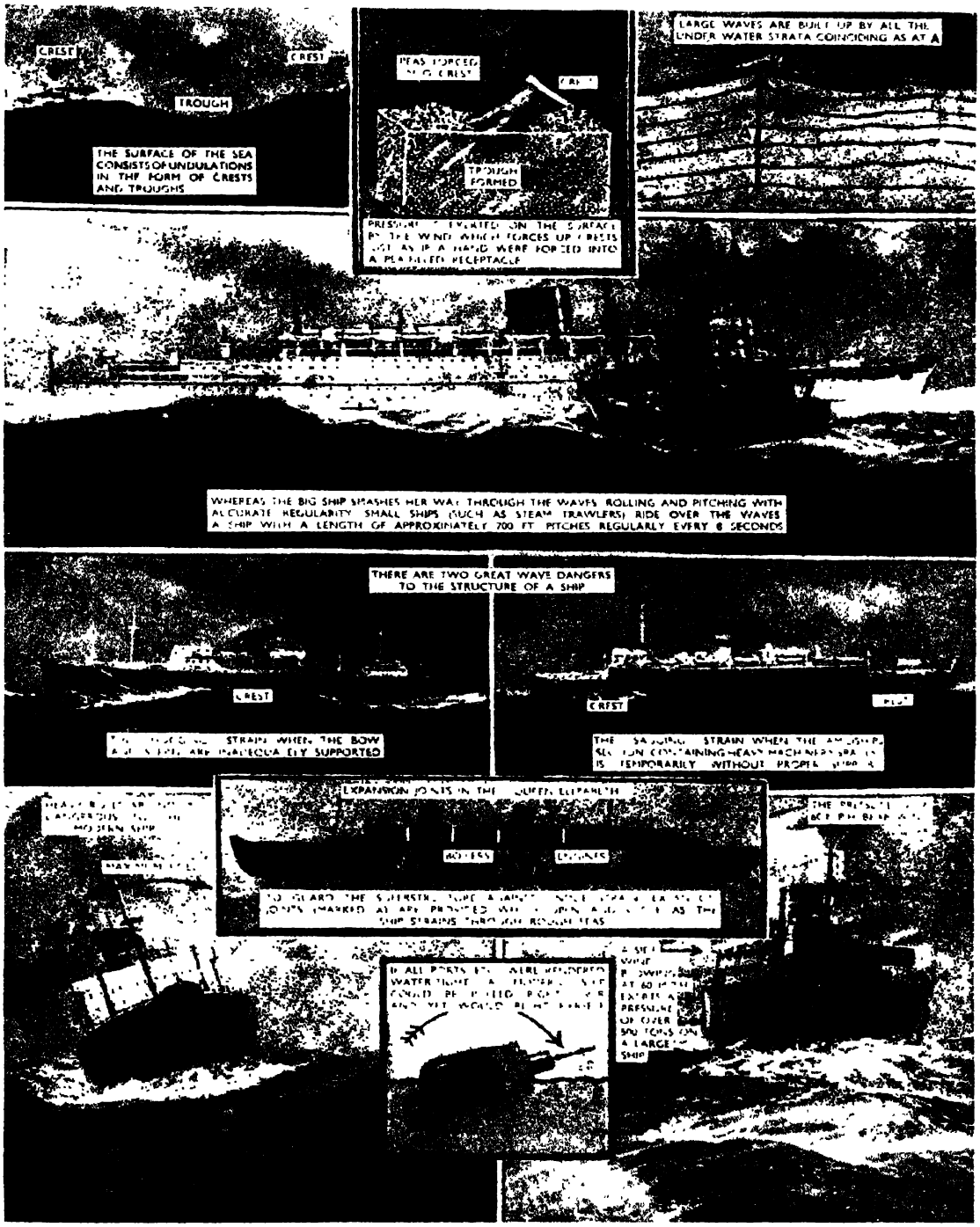
Scunthorpe is a town of Lincolnshire noted for its blast furnaces and steel works, **3**, 69 and 84

Scurvy is a disease from which old-time sailors suffered. It was due mainly to a lack of vegetables, **2**, 297

Scut. Name used for the short tail of a rabbit, **1**, 86

Scutari, or Skodra, is a town in Albania, which figured in the Balkan Wars and during the war of 1914–18 when it was overrun by the Austrians in 1915–16 and held by them till October, 1918.

THE SHIP AND THE SEA



Specially drawn for this work.

The *ship* (see p. 344) is always in battle with the *sea* (see p. 338). The force of buoyancy is waging a contest with that of gravity. Even in calm weather the sea surface consists of undulations in the form of crests and troughs, and these are increased by wind pressure. Constructors in designing and building the modern ship have to guard against many dangers, chief of which are " hogging," " sagging " and " rolling," illustrated above.

Scutari, or Uskudur, town of Asia Minor, the ancient Chrysopolis, is now a suburb of Istanbul, formerly known as Constantinople. During the Crimean War the Turkish barracks were occupied by English troops to whom Florence Nightingale administered, **4,** 160, 200

Scutching is the name given to the crushing process through which flax straw passes, **3,** 147

Scylla, in the Greek legends, was a monster with six heads, **5,** 381; **9,** 361

Scythians. A race of people who were known to exist in the seventh century B.C. They lived in the neighbourhood of the Black Sea and are said to have discovered iron, **6,** 45

Sea. A word used for a portion of the ocean as North Sea, Mediterranean Sea. It is also used in a general sense for the oceans as in the Seven Seas (meaning all the oceans) or in the South Seas. Various aspects of the sea are dealt with in *The Romance of the Sea*, a section concerning the mysteries, superstitions, records and other aspects of ships and the sailors' life, **8,** 47 *et seq.* See also *The Mystery of the Tides*, **5,** 27

—as Nature's weapon and agent of destruction, **1,** 40

Picture : The Ship and the Sea, **10,** 337

Sea-Anchor is a large canvas cone attached to a rope at its gib end which is open, **9,** 398

Sea Anemones. To be found in rock pools near the sea. When open they are fringed with petal-like tentacles, **1,** 229

—how they feed, **1,** 229

—daisy anemone, **1,** 230

—smooth or beadlet anemone, **1,** 230

—snake-locked anemone, **1,** 230

—thick-armed anemone, **1,** 230

Picture: **1,** 230

Sea-Angling. See *Angling, Sea.*

Sea Bass is the name of a fish found off our coasts.

Sea Campion is a wild flower which is in bloom all the summer. It is a member of the Silene family, and most of its leaves and stems are covered with fine hairs. Known also as Witches' Thimbles.

Picture: **1,** 303

Sea-Coal was the name we first gave to coal because it was found on the seashore, **6,** 6

Sea-Cow. See *Dugong.*

Sea Cucumber is another name for *beche de mer* or trepang.

Sea Dragon. Name given to the Plesiosaurus (*q.v.*).

Sea Eagle. A powerful bird of prey seldom seen in England, though it nests in northern and western Scotland. Not so fine as the Golden Eagle.

Picture. **1,** 187

Seafire. An aeroplane which has the characteristics of the famous Spitfire. The Seafire has been largely used by the Fleet Air Arm of the Royal Navy, **5,** 219

Sea-gull. Name given to some of the members of the *Laridæ* family, which includes gulls, terns, kittiwakes and skuas. Some of these birds are common round British coasts, but are also seen inland during severe weather. Big flocks of the black-headed gull in particular are seen in London during the winter, **1,** 201. See also *Gull.*

Pictures : **1,** 201, 203, 204 ; **10,** 331

Special Colour Supplement : **1,** between 160 and 161 (Plates 1 and 4).

Sea Hare. A slug-like creature having a pair of horns that might be likened to the ears of a hare.

Sea Holly is another name for the perennial plant eryngium. It has spiky leaves and produces a pretty seed head.

Sea Horse. A small fish of which there are several kinds, related to the Pipe fishes. They range from the Atlantic through the Mediterranean to Australia. The fore part of the body bears a curious resemblance to the head and neck of a horse and the fish swims with the body in a vertical position. The males have a brood pouch in which they carry the eggs until hatched.

Colour Plate: Australian Sea Horses, **1,** *Frontispiece.*

Seakale is one of the vegetables, the roots being usually forced.

Seal. Name given to a group of marine carnivorous animals which have become specially adapted for sea life. They are found in all seas except the tropics, but chiefly flourish in the Arctic or Antarctic regions. The different kinds include the true (earless hair) seals, and the eared Sea Lion or Fur Seal which have been over-hunted for the sake of their skins. These sea lions have sharper muzzles than the true seals and use their hind limbs when moving on land. The true seals include the common seal, grey seal and the Greenland seal, **1,** 107; **9,** 364

Pictures: Seal and Sea Lion, **1,** 108

Swimming and Diving, **1,** 109

Sea Lamprey. A marine animal found in British waters and in other seas. It may be 3 ft. in length.

Sealdah is the name of the terminus in Calcutta of the Eastern Bengal Railway, **3,** 324

Sea-Lily, a marine animal having the appearance of a plant, growing on a stalk.

Picture: **1,** 14

Sea Lion, or Fur Seal. See *Seal.*

Sealyham. Name of a sturdily-built terrier type of dog standing on short legs.

Picture : **10,** 111

Seamanship was at one time learned by hard experience on board ship and many books have been written describing the hardships and adventures of the boys who went to sea determined to become sailors. Today a boy enters a training establishment whether for the Royal Navy or the Merchant Service and is taught by experts in different branches so that he is fitted for the tasks before him when eventually he sets out on his first voyage as a member of the crew.

Picture: Training for Life Afloat, **8,** 61

Sea Mouse. A creature about 10 in. in length having a coat of mouse-coloured bristles. It lives in the sea, but spends some time in the sand between the tides.

Seanad, meaning Senate, is the name of the upper Chamber in the Parliament of the Republic of Ireland, **3,** 153

Seaplane. Similar in many respects to the land aeroplane, the seaplane is designed to take off and land on water. It is fitted with floats instead of landing-wheels. The true seaplane differs from the flying-boat which has a hull shaped like a boat though both may be broadly classed as seaplanes, **5,** 186

Picture: A Water-based Jet Fighter, **5,** 210

Sea Porcupine. See *Porcupine Fish*

Searchlight, as used in war-time for spotting aircraft and in peace for guiding them, is equipped with a powerful electric arc light, **5,** 100

Picture: **5,** 99

Sea Salmon. Name given to the fish *Pollack* (*q.v.*)

Seashore, The Little World of the. All about shellfish, sea anemones, jellyfish, starfish, etc., **1,** 227 *et seq.*

Pictures: Mussels, **1,** 227

A Cockle Shell, **1,** 228

Eggs of the Skate and the Whelk, **1,** 229

Sea Anemones, **1,** 230

Sea Urchin and Corals, **1,** 231

A Beautiful Jellyfish, **1,** 232

Starfish, **1,** 233

Crayfish, **1,** 234

Lobster, **1,** 235

The Fiddler Crab, **1,** 236

Crab Babies, **1,** 237

Fighting Crabs, **1,** 238

Colour Plate : A Collection of British Shells, **6,** *facing* 397

Sea Snail. A uni-valve mollusc found in the sea in most parts of the world, **1,** 227, 228

Seasons. Periods of the year, fixed according to the position of the sun with regard to the earth The seasons consist of spring, summer, autumn and winter, **9,** 300

Sea-Swallow. Name often given to the Tern (*q.v.*).

Seathwaite is a village of Cumberland below Sty Head Pass. It is said to have the heaviest rainfall in England, **3,** 88

Seattle is a large port, industrial city and commercial centre of the State of Washington, U.S.A.

Sea Unicorn. Name given to the Narwhal (*q.v.*).

Sea Urchin. Circular or disc-shaped sea animal, its body covered with spines. It is found round our coasts and is not unlike a hedgehog.

Picture. **1,** 231

Sea Viper. Name given by fishermen to the weaver fish (*q.v.*).

Picture: **1,** 218

Seaweed. Name given to large numbers of different types of the lower plant-forms which grow in the sea. Some forms of seaweed are useful as human food, and they contain iodine and other chemicals which, when extracted from the seaweed, are used in the manufacture of certain materials such as soap. Certain kinds of seaweed have also proved valuable as a fertiliser.

Sebastopol. See *Sevastopol.*

Secchi, Angelo (1818–78). An Italian astronomer, he drew up a catalogue of the stars in 1867.

Secole Lane. A street in London dating from 1253. It was probably a coal market, **6**, 6

Secondary Depression. See *Weather Depressions.*

Second World War (1939-45). This great and terrible war was between Germany, Italy, Japan and their satellites on the one hand and Great Britain, the British Commonwealth Nations, France, the United States of America, Russia, and their smaller allies on the other. Beginning with the German invasion of Poland, the war at first went completely in favour of the aggressors and for a time Germany was virtual master of Europe. Victory came to the Allies only after a long and costly struggle, **2**, 247 *et seq.*, 393 *et seq.*
Pictures: On their Way to War-time Homes, **2**, 248
Underground Headquarters of Britain's War Cabinet, **2**, 249
The Miracle of Dunkirk, **2**, 250
Some of "The Few," **2**, 251
Great Leaders Meet, **2**, 253
The War at Sea, **2**, 254
The Landings in Normandy, **2**, 255
The Women Wardens' Great Work, **2**, 393
To Office as Usual Next Morning, **2**, 395
The Boy Messenger, **2**, 397
While the Fires Rage, **2**, 399
The Man Who Brought Horror Upon Europe, **2**, 414
Victory Day, 1946, **2**, 415
Stamps of the Second World War, **4**, 413

Secretary Bird. Belonging to the family of vultures and a bird of prey standing about 4 ft in height. It is found in parts of Africa and a bunch of long feathers on its head suggests a quill pen—hence its name.

Secunderabad is a town of Hyderabad, the chief native State of India. Up to 1947 it was one of the largest military stations in India.

Security Council. The Council is a part of the United Nations Organisation. There are five permanent members (U.S.A., Britain, China, U.S.S.R., and France) and six other members. Its main task is the preservation of peace, **2**, 259
Picture: **2**, 260

Sedan is a town of France standing on the River Meuse. It is famous as the scene of a battle in 1870 when French forces were defeated by the Germans. Not far from here, German armoured columns broke through in 1940 in their drive to encircle the British army, **2**, 249

Sedbergh is a town of the West Riding of Yorkshire. It is famous for Sedbergh School, founded in 1525.

Sedgemoor is to be found in Somerset, a few miles from Bridgwater. It was the scene of the Battle of Sedgemoor (1685) between the forces of James II and those of Monmouth, **2**, 172, 408
Picture: The Duke of Monmouth Pleads for His Life, **2**, 171

Sedges are plants with narrow, grass-like leaves. They grow chiefly in marshy places, **1**, 370

Sedge Warbler. A small bird noted for its clear song. Its nest is made where sedges grow thickly.
Pictures: **1**, 170, 171

Sedilla, a part of a church or cathedral, usually on the south side of the chancel. It forms seats for the clergy.
Picture: **7**, 302

Sediment is matter which sinks to the bottom of a liquid.

Seed. In botany the seed is the fertilised ovule of a plant which contains the embryo of a new plant, **1**, 297-8

Seed-Box. Name sometimes given to the pistil of a flower. See *Pistil.*

Seedling is the name given to a small plant as raised from seed. Where seedlings come up too thickly they require thinning out by drawing up superfluous plants with finger and thumb, **8**, 277

Seeds vary in shape according to the seed-cases in which they grow, **1**, 298
—how seeds travel, **1**, 369
—winged seeds, **1**, 375
—the life of seeds, **1**, 376
Pictures: Hooked Seeds, **1**, 370

Seeds, Winged. See *Winged Seeds.*

Seggars are the fire-clay containers in which chinaware is baked in the kiln, **9**, 196
Picture: **9**, 200

Segovia is the name of an agricultural district of Spain and of the capital of the district. It is famous for the ruins of a Roman aqueduct, **6**, 238

Segrave, Sir Henry O'Neal Dehane (1896-1930). Great British racing motorist. At Daytona, in 1929, he reached a speed of more than 231 miles per hour. He lost his life on Lake Windermere whilst trying out a speed boat, **5**, 176

Seigneur is an old title, meaning "lord," which is still used on the island of Sark in the Channel Islands, **3**, 53

Seine. Name of a great river of France. It flows through Paris and empties into the sea at Havre. Large vessels ascend the river as far as Rouen.
A department, or large county of France is also called Seine.

Seine Nets are used by fishermen. The nets may be drawn in on board boats or pulled on to the shore, **8**, 75
Picture: **8**, 72

Seine-et-Marne, Seine-et-Oise and **Seine-Inferieure** are, respectively, departments of France.

Seismology is that branch of science which deals with earthquakes. An instrument which registers the vibrations of earthquakes and enables calculations to be made indicating the approximate locality and extent of the shock is known as a seismograph.

Sekondi is a seaport and commercial centre of the Gold Coast, West Africa, **3**, 380

Selangor. One of the states of the Federation of Malaya. Its capital, Kuala Lumpur, is also the capital of the Federation, **3**, 403

Selborne, a small place of Hampshire, is famous as the birthplace of the great naturalist Gilbert White, **7**, 230
Picture: **7**, 230

Selborne Society, formed in 1885 as the Selborne League, was joined later by the Plumage League to carry on work against the wholesale destructions of wild birds. The Society also supports the efforts to secure safe nesting-places for birds such as the Brent Valley Bird Sanctuary and to promote nature study as well as rambles in connection with antiquarian and historical study. The Society was named after Gilbert White of Selborne.

Selby. A town of the West Riding of Yorkshire famous for its large Abbey Church. It stands on the River Ouse.

Selenium is a non-metallic element (symbol Se), closely related to sulphur, and of a reddish colour. The quality which makes selenium valuable for a number of purposes is that its resistance to an electric current decreases as the brightness of light falling on it increases.

Seleucia was an ancient city on the banks of the River Tigris. It was built by a king of Syria, **5**, 73

Self-Binder. Name given to a farm appliance drawn by horses or a tractor. It cuts corn, binds up the sheaves and throws them out in its wake, **6**, 389
Pictures: Sussex Corn, **3**, 35
There's Joy in the Harvest, **6**, 388

Self-Heal. Name of a wild plant which sends up several stems from prostrate growths, often to a height of 1 ft. It bears curious violet or purple flowers. In olden days the leaves were applied to cuts or wounds.

Selkirk, Alexander (1676-1721). A Scottish sailor. He was put ashore on the island of Juan Fernandez in 1704 and his life there until rescued in 1709 is believed to have formed the basis of *Robinson Crusoe*, **3**, 398; **4**, 324

Selkirk is a town of Selkirkshire, on the River Ettrick. It is famous for its twills or tweeds and shoes, **3**, 112

Selkirkshire is a county of south-east Scotland. It has considerable woollen industries and is a centre of farming. The county town is Selkirk.

Selous, Frederick Courteney (1851-1917). An African traveller, hunter and author. A wonderful naturalist, he was the greatest authority on the lion.

Selsey Bill juts into the English Channel immediately to the south of Chichester. The town of Selsey is a well-known holiday centre.

Selvas is the name given to the dense equatorial forests of Brazil, **4**, 314

Selvedge is the term applied to the edges of cloth and other material when so finished that they do not require hemming, **8**, 407

Selworthy is a picturesque village of Exmoor, near Minehead, Somerset, **3**, 414
Picture: **3**, 77

Semaphore. A signalling apparatus resembling a railway signal, with arms which are moved into varying positions to indicate different letters, numerals and signals.
The semaphore system of signalling is also worked with two flags held in the hands.

Seminoles are a strange people living in Florida, U.S.A., **4**, 294

Semiramis, a Queen of Babylon. For her were created the Hanging Gardens of Babylon, one of the Seven Wonders of the Ancient World, **7,** 294

Semolina. The middlings or coarse particles of the grain produced during the grinding of wheat. It is used in the manufacture of macaroni and other cereal foods, in addition to forming the base of nutritious puddings.

Senegal. A river of West Africa which flows to the Atlantic Ocean through the French Territory of the same name.

Senegal. A French territory in West Africa. See *West Africa, French.*

Senate. The assembly or council of leading citizens who shared in the government of ancient Rome, **2,** 71 —the name is also used in modern times, as in the U.S.A. for the Upper House of Congress.

Senators are members of the Senate (equivalent to our House of Lords) in the U.S.A.

Sennar is a district of the Anglo-Egyptian Sudan in Africa. It gives its name to the Sennar Dam built across the Blue Nile River, **4,** 197, 378
Picture. Rough Water at the Sennar Dam, **5,** 79

Sennen Cove is a beauty spot of Cornwall, near Land's End. Here a submarine cable from America comes ashore.
Picture: **6,** 183

Sennit is the name given to cordage made by plaiting a number of strands of rope yarn together.

Sense Organs in the body consist of eyes, ears, nose, mouth and the skin, **8,** 230

Sensitise means to make sensitive to light. Photographic plates and films, and most photographic printing papers, are sensitised by being coated with a preparation containing bromide of silver
This substance is so easily affected by light that a flash lasting but a tiny fraction of a second may start chemical changes that become evident when the bromide is brought into contact with a "developing" fluid, which makes the affected parts darken.

Seoul, or Keijo as it is also called, is the chief city of Korea. It is the capital of the Republic of Korea which rules in the south, but is also claimed as the capital by the Russian-sponsored "Korean People's Republic" which rules in the north. Pyeng-Yuang is the present capital of the north, **4,** 250

Sepals. The outermost leaves of a flower. In the case of a buttercup, the small green leaves under the yellow cup, **1,** 291
Picture: **1,** 294

Sequence. This word is used in film-making to denote the parts into which a play is broken for convenience of handling. They correspond somewhat to the acts and scenes of a stage play, although the cinema audience is usually unaware of any "break," **9,** 250

Sequoia. Name given to the Wellingtonia or Californian Big Tree.

Seraglio Palace is a home of the Sultans of the old Ottoman, or Turkish Empire in Istanbul. It is now a museum, **4,** 164

Seraglio Point is a part of the Stamboul quarter of Istanbul off which the waters of the Golden Horn join with those of the Bosporus, **4,** 164

Serape is a blanket-like, striped cloth which is the inseparable companion of Mexican *peons.*
Picture: **4,** 297

Serbia. Once an independent kingdom of the Balkans, Serbia is now a federal unit of the Republic of Yugoslavia. Belgrade, the capital of Serbia, is also the capital of Yugoslavia, **4,** 90

Serfs. The lowest of the classes of the population under the Feudal System. They were practically slaves, **2,** 125

Seria. An oil centre in north Borneo at the mouth of the small Batang Baram River, **3,** 404

Sericulture is the name given to the breeding and rearing of silkworms for the production of silk (*q.v.*).

Seringapatam is a town of Mysore, India. It is historical because of its siege by the British in 1799 against Tippoo Sahib who held the town and was killed there.

Seringueiro. A native rubber-gatherer in the forests of the Amazon, **4,** 316

Serowe, the chief town of the Bechuanaland Protectorate, is the capital of the Bamangwato, one of the most important tribes of the Bantu people in the Protectorate, **3,** 294

Serpens is the name of a constellation or group of stars.

Serpent is an alternative name for the legless reptiles usually known as snakes. When the word serpent is used it usually refers to a large snake (*q.v.*).

Serpentine, The, an artificial waterway running through Hyde Park, London.

Serpollet, M. A French engineer, he invented a steam tricycle, **5,** 167

Serpula Worm. A creature that builds a pink-coloured tube of shell-like substance in which it hides. Found at the seaside.

Serrated means notched at the edges like a saw; toothed. Some leaves have serrated edges.

Serval. Name of a wild cat found in many parts of Africa. The animal is some 4 ft. in length.

Service, Robert William (born 1874). Well-known Canadian author and poet. His poems *Songs of a Sourdough* are very widely read.

Services We Maintain for the Common Good. A section covering those special services carried out by the Government, Municipal authorities or other authorised bodies for the welfare and convenience of all sections of the nation:—
1. The Water We Drink, **6,** 236
2. With the Firefighters, **6,** 253
3. How We Get Our Gas, **6,** 261
4. The Business of the G.P.O., **6,** 277
5. How Electricity is Supplied, **6,** 289
See also *London Tube Railways.*
Picture: Under London's Streets, **10,** 355

Service Tree. Sometimes known as the Sorb, this tree is not unlike the more familiar mountain ash.
Picture: **1,** 289

Serw. A river of North Wales whose waters are to be used to provide hydro-electric power, **3,** 108

Sesheke, Northern Rhodesia, on the Zambesi. It was visited by Livingstone, **2,** 333

Set. In film language, this is the particular setting of the scenic effects and properties on which "shots" have to be taken, **9,** 257

Sett. Name given to the home of the badger, **1,** 122

Setter. Name of one of the "game" dogs, trained to mark down game. There are distinct English, Scottish and Irish breeds and a variety known as the Gordon setter.
Picture: **10,** 111

Settle is a town of Yorkshire, on the River Ribble, **3,** 109

Settlement, Act of (1701) ensured that on the death of Queen Anne, the English throne would pass to Sophia, Electress of Hanover and her heirs and provided safeguards for the maintenance of certain rights and liberties, **2,** 178

Setubal. A port of southern Portugal which is a base for sardine and tunny fishermen, **4,** 140

Sevastopol is a seaport, holiday resort and large town of the Soviet Union, standing on the Black Sea. It was besieged in the Crimean War (1854-55) and partially destroyed in the World War, **2,** 412
Sometimes spelt. *Schastopol.*

Seven is regarded as a sacred or mystic number among many nations, particularly in the East, where the early civilisations began. The creation of the world was completed on the seventh day. The number is often used in the Bible to express a large number and was used also in this sense by Shakespeare who also referred to the Seven Ages of Man. There are also the seven senses, the seven virtues, the seven deadly sins, the seven champions of Christendom, and other instances, and the number is sometimes called the number of perfection, **7,** 290; **9,** 330

Sevenoaks is a small town of Kent named after seven oak trees that formerly stood there just above the River Darenth.
The place has a famous school dating from the fifteenth century
Pictures: Knole House, **7,** 320, 321

Seven Pillars of Wisdom, The. Famous book of his experiences by Lawrence of Arabia, **2,** 388

Seven Sages of Greece. Wise men of the sixth century B.C., noted for their maxims. They were Bias (*c.* 550 B.C.), Chilo (*c.* 590 B.C.), Periander (665-585 B.C.), Pittacus (652-569 B.C.), Solon (648-558 B.C.), Thales (636-546 B.C.) and Cleobulus (*c.* 580 B.C.). Bias was noted for teaching morals, Chilo for his wise sayings, Solon for his laws, Thales for his astronomy, and Pittacos for his attacks on slavery.
Picture: Tomb of Cleobulus, **4,** 161

Seven Sisters is the name of a waterfall on one of the fjords of Norway.
Picture: **4,** 34

Seven Sisters. Term applied to headlands on the Sussex coast, **9**, 309
Picture: **3**, 27
Seven Springs. Name given to Cotswolds streams that unite together to form the young River Thames, **3**, 22
Seven Wonders of the Ancient World. They were: (1) The Colossus at Rhodes; (2) The Great Pyramid of Egypt; (3) The Mausoleum of Artemisia; (4) The Statue of Zeus; (5) The Temple of Diana; (6) The Hanging Gardens of Babylon; (7) The Pharos or Lighthouse of Alexandria, **7**, 288; **9**, 323
—the list was made by Antipater of Sidon, **7**, 290
Pictures: **7**, 286, 287
Seven Years Old. A Poem by Jean Ingelow, **9**, 90
Seven Years War (1756–63). This war was a renewal of the struggle between Britain and France and between Austria and Prussia. The war led to the collapse of France as a colonial power and the founding of the British Indian Empire, **2**, 184, 409
—the Seven Years War in Canada, **3**, 156
Severn. A river of England and Wales. It empties into the Bristol Channel after a course of about 220 miles and passes through Shropshire, Worcestershire and Gloucestershire. The source is in Plinlymmon, **3**, 70, 72
Picture: The Severn Bore, **5**, 31
Severn Bridge. The new suspension bridge across the Severn Estuary will when completed be the largest suspension bridge in Europe and third largest in the world. Its centre span will be 3,300 ft. and its construction will take several years.
Severn Tunnel. Famous railway tunnel, four and a half miles in length, it shortens the journey between South Wales and the West of England, **3**, 152; **5**, 128
Severus, Lucius Septimus (146–211). An emperor of the Romans. He repaired Hadrian's Wall across the north of England in 208. He died at York in 211, **2**, 403; **3**, 82
Seville is a Province of Spain famous for its oranges and other fruits and for its wines. The provincial capital is similarly named.
Ferdinand Magellan sailed from Seville in 1519, **2**, 282
Pictures: The Cathedral of Old Seville, **4**, 132
An Eastern Procession, **4**, 135
Seville Cathedral is the largest Gothic Cathedral in the world. It contains many famous paintings by such masters as Murillo and Goya.
Picture: **4**, 132
Sèvres is a town of France famous for its fine china and porcelain. It stands on the River Seine, **4**, 14
Sewing is the art of joining materials together with the aid of needle and cotton, or thread, **8**, 380, 383, 389, 395, 405
See also *Plain Needlework.*
Pictures: Sewing for Small Children, **8**, 380
Designs for Tacking Stitch, **8**, 384
Blanket Stitch, **8**, 396
An Embroidered Apron, **8**, 406
Sextant. An instrument used for finding the latitude of a ship at sea or of a place on land.
Sexton Beetle. An insect which removes earth from under and round the dead body of a bird or small animal so that the carcase is eventually completely buried.
Seychelles. A group of islands in the Indian Ocean which are a British Colony, Mahé is the principal island and on this is Victoria, the capital, **3**, 388
Pictures: Verdant Shores of Mahé, **3**, 386
Husking Coconuts in the Seychelles, **4**, 370
Sfax is a seaport of North Africa, in Tunis.
s.g. means specific gravity
Sgurr a'Mhaim is the name of a height overlooking Glen Nevis, in Inverness, Scotland.
Picture: **3**, 123
Shabarahk Usu, a valley in Mongolia where the eggs of the dinosaur (an extinct reptile) have been found.
Shackleton, Sir Ernest Henry (1874–1922). One of the best-known of modern Antarctic explorers he commanded the expedition of 1908–09. In 1914 his ship the *Endurance* was wrecked in the ice, but survivors made a wonderful journey by boat to South Georgia, **2**, 370 *et seq.*
Pictures: Landmarks Across the Ice Field, **2**, 374
Fast Amidst Ice Boulders, **2**, 375
The End of a Gallant Ship, **2**, 377
Shad. Name of a sea fish akin to the herring. It is found off our coasts and in most European waters.
Shadow Path is a term used by astronomers to define the shadow of the moon on the earth's surface during a solar eclipse, **8**, 124
Shaduf. The name given to a primitive Egyptian device for drawing water from the River Nile, **4**, 194
Shaftesbury. A town of Dorset believed to have been founded by Alfred the Great. On some milestones in the district and in the novels of Thomas Hardy the name appears as *Shaston.*
Shag. A sea-bird found on some parts of the British coast Known also as the Green Cormorant, **1**, 201
Shah Jehan (1614–66) was one of the Moghul Emperors of India. He built the Taj Mahal, **3**, 328
Picture: **3**, 327
Shahjehanabad, or the city of Shah Jehan, is the old-time name for Delhi, India, **3**, 329
Shakespeare, William (1564–1616). Our greatest dramatist and poet. Born at Stratford-on-Avon, the son of John Shakespeare, a wool-dealer, he attended the Stratford Grammar School, and possibly became a schoolmaster himself for a short time. In 1582 he married Anne Hathaway. Later he joined a company of players and by 1589 was in London and known as a playwright. His last few years were spent in Stratford where he died and was buried in the parish church, **2**, 154, 406; **3**, 70; **7**, 129 *et seq.* (*p.h.*)
—he was punished for poaching, **3**, 407
Poems: I Know a Bank, **9**, 86
The Fairies' Song, **9**, 94
England, **9**, 96
Winter, **9**, 101
Pictures: Shakespeare Reading Before Queen Elizabeth, **2**, 154
When Titania was Enchanted, **7**, 130
Falstaff and His Two Ladies, **7**, 131
From *Macbeth* and *Othello*, **7**, 132
Miss Ellen Terry as Lady Macbeth, **7**, 133
The Tragedy of King Lear, **7**, 134
Two Famous Comedies, **7**, 135
Colour Plates: Shylock's Answer to Salanio and Salarino, **7**, *facing* 125
The Fairies' Song, **9**, *Frontispiece*
Shakespeare's Cliff is an enormous wall of chalk rock rising from the sea to a height of more than 350 ft. It is situated near Dover on the Kentish coast, **9**, 312
Picture: **3**, 6
Shakespeare's Country is the term applied to Stratford-on-Avon, Shottery and the district round about.
Shakumaxon, in the State of Pennsylvania, U.S.A., was the place where William Penn made a treaty of friendship with the Indians, **2**, 170
Shallow, Mr. Justice. A character who appears in two of Shakespeare's plays—*The Merry Wives of Windsor* and *Henry IV.* He is said to have been modelled upon Sir Thomas Lucy who once punished Shakespeare for poaching, **3**, 407
Shamans are the priests of the primitive, nomad people who live on the Asiatic shore of the Arctic Ocean, **4**, 108
Shamrock. A form of clover having three heart-shaped leaves. It is used as the badge of Ireland.
- in South Africa, **1**, 338
Shan. The name of a people of Burma who are the labourers of the hill country and the raftsmen of the Irrawaddy, **4**, 218
Shangaan. The name of a tribe of the Bantu people.
Picture Shangaan Women Using a Maize " Mortar," **3**, 290
Shanghai is a city of China, some fifty miles from the mouth of the Yangtse River It is a great exporting centre, **4**, 242
Shan-hai-kuan is in northern China on the Gulf of Liau-tung and is one of the terminal points of the Great Wall of China, **4**, 228
Shankiwan is a fishing village on the British island of Hong Kong.
Picture: **4**, 245
Shanklin is a favourite holiday resort on the eastern coast of the Isle of Wight, **3**, 38
Shalmaneser. The name of five of the kings of Assyria who ruled some centuries before the Christian era, **9**, 13
Picture: The Obelisk of Shalmaneser III, **9**, 13
Shannon is a river of Ireland, 224 miles in length and therefore the longest river in the British Isles, **3**, 141 *et seq.*, 150 *et seq.*
Picture: **3**, 142
Shannon Airport. See *Rineanna.*
Shannon Power Scheme is the name given to the successful plan of harnessing the River Shannon for the generating of electrical power, **3**, 142
Picture: The Shannon in Harness, **3**, 142

Shantung is a northern province of China. Tsinan is its main city, **4**, 376
Picture: **4**, 224

Shap is a small town of Westmorland. Near by is Shap Fell, which links the Pennines with the hills of the English Lake District, **3**, 80, 109

S.H.A.P.E. Supreme Headquarters Allied Powers in Europe.

Shark. Name of a large family of fish, representatives of which are found in most parts of the world, including British waters. They have usually very powerful teeth Some may reach a length of 40 ft., and, being man-eaters, are dangerous to bathers. Special precautions against sharks are taken on Australian bathing-beaches.
See also *Basking Shark*, *Hammer-Head Shark*, *Tiger Shark*, *Whale Shark*, and *White Shark*.

Shark Bay is in Western Australia. It was visited in 1616 by Dirck Hartog, a Dutch seaman, after whom one of the islands in the bay has been named, **3**, 200

Shark, Prehistoric. See *Ganoid.*

Sharp, William (1856-1905). Well-known writer of Celtic tales and poems under the pen-name Fiona Macleod.

Shasta Daisy. Name given to the *Chrysanthemum Maximum* (*q.v.*).

Shat-el-Arab is the name given to the great river of Iraq formed by the joining of the Tigris and Euphrates, **4**, 202

Shaugh Bridge is a point on Dartmoor at which wild ponies are periodically gathered together to be sold.
Picture: **1**, 90

Shaw, George Bernard (1856–1950). An Irish dramatist, and author. A keen student of the times, Shaw wrote many plays, among them *Man and Superman*, *Cæsar and Cleopatra*, *Saint Joan* may be mentioned, **7**, 253
Pictures: From the Great Drama, "St. Joan," **7**, 253
Picture : **7**, 254

Shaw, Sir Eyre Massey (1830–1908). A graduate of Dublin University he became an Army officer and later chief constable of Belfast where he reorganised the fire brigade so efficiently that in 1861 he became chief of the London Fire Brigade. During his thirty years of office he introduced many improvements and was knighted on his retirement in 1891, **6**, 254

Shawinigan Falls are on the St Maurice River of Canada. They supply the town of Three Rivers, Quebec, with power, **3**, 195

Sheading is a word of Scandinavian origin used in the Isle of Man to denote the administrative divisions of the island. Its original meaning is "ship-district," **3**, 92

Sheal. See *Shieling.*

Shearing is the term applied to the removal of its coat of wool from a sheep, **3**, 216, 217

Shearwater. Name given to a family of sea birds. They are all akin to *Petrels* (*q.v.*).

Sheathbill. Name of a family of small birds. They are found in South America and have somewhat the appearance of gulls.

Sheave. A grooved wheel over which a rope runs. The wheel of a pulley. The cords of a sash window run over brass or iron sheaves.

Sheba is the name of a kingdom of olden times in Arabia. The Queen of Sheba is said in the Holy Bible to have paid a State visit to King Solomon and presented him with gold.
—the Queen of Sheba and Zimbabwe, **3**, 301

Sheep. Name of a large family of animals. Domesticated sheep are descended from the wild species of the drier uplands of Central Asia, but most of the modern breeds are of British origin. Wild sheep are found in many parts of the world, while the domesticated sheep are bred in Britain, Australia, New Zealand, South Africa, U.S.A., Argentine, and in most European countries. Breeds are specialised for wool or meat production and there are many different breeds, the chief in this country being Cotswold, Leicester, Wensleydale, Southdown, Cheviot, Blackface, and different County sheep, **6**, 380
See also *An Australian Sheep Station*, **3**, 214 *et seq.*
Pictures: In Australia, **3**, 207; **3**, 214
When Sheep are Dipped, **6**, 17
Sheep-shearing in England's Pastures, **6**, 359
The Sheep with Two Lambs, **6**, 381
Colour Plate: Amid the Beauties of New Zealand's Sheep Farms, **3**, *facing* 276

Sheep-Dog Trials are events held in districts where many sheep are kept. Well-trained dogs are matched together and compete in driving and penning sheep, **3**, 90

Sheep, Wild Barbary. See *Wild Barbary Sheep.*

Sheerness stands at the mouth of the Medway, where the river enters the Thames estuary, and is an important naval station, **3**, 34

Sheet Lightning is seen when the electrical discharge takes place between two clouds, **5**, 26

Sheffield, a town of the West Riding of Yorkshire, standing on the River Don. It is famous the world over as a great steel centre and for its cutlery, but has many other interests, **3**, 80 *et seq.*; **6**, 56
Picture: **3**, 80

Sheffield, John, Duke of Buckingham.
Picture: **3**, 7

Shellal is on the River Nile, south of (and near) Assouan. It is the terminus of the railway from Cairo, where travellers southward must take river steamer up to Wadi Halfa whence a railway runs up to Sennar on the Blue Nile, **4**, 195

Shelldrake. A member of the wild duck family, distinguished by its bright plumage. The beak is bright red, dark green head, black and white wings, and it has a shield-like patch on its wings. It is over two feet in length.

Shelley, Mrs. Mary Wollstonecraft (1797–1851). An English novelist who became wife of Percy Bysshe Shelley (*q.v.*). Her best-known work was *Frankenstein*, the story of a man who created a monster and gave it life. She also edited Shelley's poems.

Shelley, Percy Bysshe (1792–1822). A brilliant scholar as a boy, he rose to become a great English poet. He lived much in Italy and was drowned whilst sailing off Spezia, **2**, 411; **7**, 144

Shellfish, All About. The story of limpets, mussels, oysters and similar creatures, **1**, 227
Colour Plate: A Collection of British Shells, **6**, *facing* 397
See also *Seashore*, *The Little World of the.*

Shellover, Old. A Poem by Walter De La Mare, **9**, 115

Shensi is a north-western province of China. Sian is the provincial capital. The sacred mountain of Hwashan is in the province.
Pictures: A Pilgrim's Offering, **4**, 226
A Sacred Mountain Landscape, **4**, 227

Shenyang is another name for Mukden (*q.v.*).

Shepherd Boy Who Cried "Wolf!", The. A Tale from Æsop, **5**, 326

Shepherd Prince of Troy, The. Tales from the *Iliad* and the *Odyssey*, **5**, 359

Shepherd's Crook Dance is one of the many traditional peasant dances of Hungary.
Photo-tone Supplement. The Continent of Europe, **4**, *between* 112 and 113

Shepherd's Purse, a wild plant so called from the shape of its seed-cases, **1**, 302
Special Colour Supplement: British Wild Flowers, **1**, *between* 304 and 305 (Plate 1)

Shepherd's Warning. Popular name for the wild plant *Scarlet Pimpernel* (*q.v.*)

Sheppard, Jack (1702–24). A British highwayman who made a reputation by his daring escape on four separate occasions after he had been captured and put in prison. He was finally caught and condemned, **3**, 205

Shepperton-on-Thames. Picturesque residential town of Middlesex. Close at hand is the well-known Littleton Reservoir.

Shepton Mallet is a town of Somerset It has many industries.

Sheraton, Thomas (about 1751–1806), was one of the most famous English cabinet-makers and designers of furniture. He wrote books on his craft, **2**, 183

Sherborne is a small market town of Dorset famous as the site of a vast Abbey. Alfred the Great is said to have been educated at Sherborne School.

Sheridan, Richard Brinsley (1751–1816). A most distinguished British playwright, he wrote *The School for Scandal.* Entering Parliament, he soon became known for his powers as an orator.

Sheringham. A popular Norfolk coastal resort noted for its crabs, **3**, 60

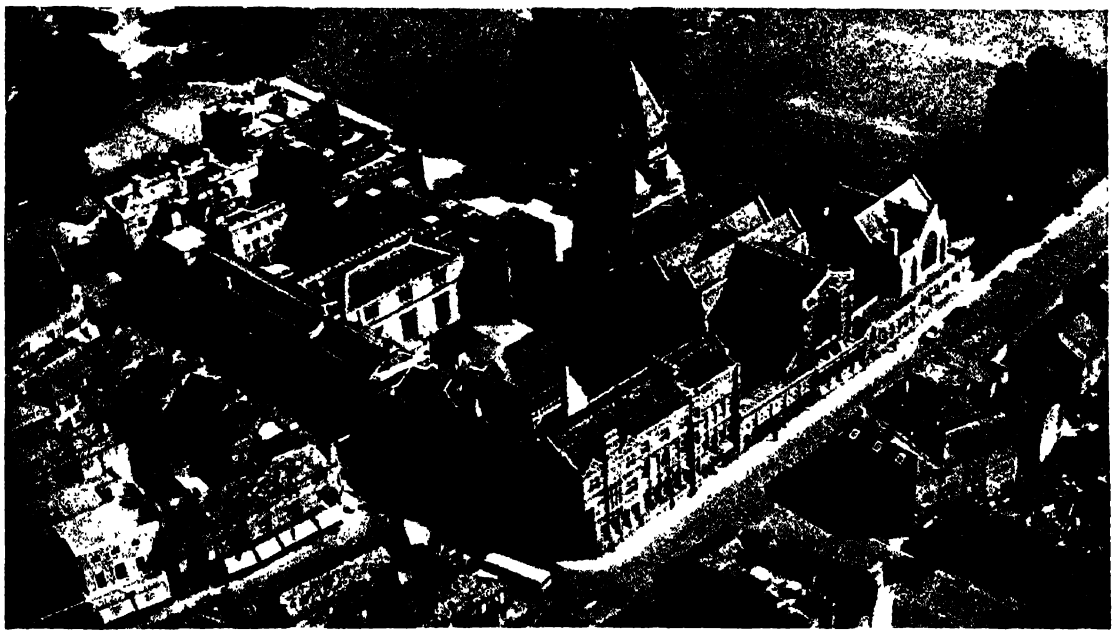
Sherlock Holmes. Famous detective character created by Sir Arthur Conan Doyle, **7**, 243
Picture: **7**, 243

Sherriff. Name of a Scots farmer who, early in the nineteenth century, originated a new and more profitable variety of wheat, **1**, 377

TWO FAMOUS SCHOOLS



In 1571, John Lyon, described as a Yeoman of this parish, founded a *school* (see p. 335) at Harrow, Middlesex. It has long been famed as one of England's great public schools Its founder decreed that the education should be of a classical nature and sports and games such as " driving a top, tossing a handball, running and shooting " should be enjoyed by its scholars.



Fox Photos.

Founded in 1657 by Lawrence Sheriff, a grocer and Purveyor of Spices to the Royal Household, Rugby School, in Warwickshire, has earned fame in other spheres besides education It was from Rugby that one of our great national games came, and it was about this school and its famous headmaster, Dr. Arnold, that *Tom Brown's Schooldays* was written nearly a century ago.

Sherriffmuir, Battle of (1715). An indecisive battle fought in Scotland during the Jacobite rebellion, **2**, 180

S'Hertogenbosch. A town of southern Holland with a population of over 53,000.
Pictures: **4**, 30 and 31

Sherwood Forest is a district of the county of Nottingham that was once a dense woodland covering some 200 square miles. The forestland is now much smaller. Associated for all time with the name of Robin Hood.
Picture : **10**, 323

Sherwood, Mrs. Mary Martha (1775–1851). Well-known writer of books for girls and boys, such as *The Fairchild Family* and *Susan Gray.*

Shetland Islands. Forming one of the counties of Scotland, these islands are found off the north coast beyond the Orkneys.
There are about 100 islands, some 27 of them being inhabited. Mainland is the largest, the interests of the islanders being chiefly fishing and agriculture, especially the rearing of sheep. The capital is Lerwick, **3**, 140

Shetland Ponies are believed to be descended from wild stock that once roamed the islands of Scotland. They have thick shoulders and short legs, **1**, 97
Picture: **1**, 96

Shetland Wool is a fine type of wool obtained from the sheep of the Shetland Isles, **6**, 358
Picture: Hand-weaving in the Shetlands, **6**, 364

Shields, North. See *North Shields.*

Shields, South. See *South Shields.*

Shieling, or Sheal, is the name given to a shepherd's hut in the Hebrides, **3**, 140

Shiel, Loch. See *Loch Shiel.*

Shift is a term applied to a group of workers and to the period when they work. In a coal-mine there are usually three shifts in the twenty-four hours, **6**, 28

Shih Hwang-ti was a Chinese Emperor of the Ch'in dynasty (256–207 B.C.). It was he who began building the Great Wall of China, **4**, 225 *et seq.*

Shi'ite is the name given to a Moslem belonging to the Shiah sect of that religion which has slightly different beliefs from other Moslems. One of the great Shi'ite shrines is at Kadhiman, near Baghdad.
Picture: **4**, 200

Shikari is the name given in India to a hunter; also spelt shikaree, **3**, 348

Shikoku is one of the main islands of Japan. It has timber wealth and produces fruit and sugar, **4**, 250

Shillibeer, George (1797–1866). A London coach-builder, he was the first man to put an omnibus on the streets of London.
Picture: A Three-horsed Omnibus, **5**, 164

Shillong, on the River Brahmaputra, is the capital of Assam in north-east India.

Shinar, Plain of. Mentioned in the Bible as being the site of the Tower in Babel, it is supposed to have been in the land we now know as Iraq, **4**, 199

Ship. In general, any vessel intended for navigation, but used particularly for ocean-going vessels. Early ships of the Phoenicians, Greeks, and Romans were propelled by oars and sails. Later ships depended entirely on sail until the beginning of the nineteenth century when experiments with steam began. The introduction of the turbine engine early in the twentieth century was the latest stage in the development of the steamship.
See *Ocean Greyhounds and River Whippets*, **5**, 249 *et seq.*; **9**, 397
See also *Royal Navy, Merchant Navy, Romance of the Sea*, **8**, 1 *et seq.*
Pictures: The Liner *Caronia*, **5**, 249
To Propel a Great Liner, **5**, 250
In the Stokehold of an Oil-Burner, **5**, 251
A Gallant Old-time Sailing Ship, **5**, 252
On Board the *Queen Mary*, **5**, 253
The Engine Control Room, **5**, 254
To the South and the Far East, **5**, 255
Painting the Funnels, **5**, 256
Lifeboat Drill at Sea, **5**, 257
Ships With a New Look, **5**, 258
The Engine that Gave us Faster Steamships, **5**, 259
A Stream-lined Funnel, **5**, 260
The Newcomer Greets the "Old Lady," **5**, 261
The *Empress of Scotland* and the *Astrea*, **5**, 262
Liners of the East and West, **5**, 263
On Board a Modern Liner: a Diagrammatic View, **5**, 264–5
Bound for the Isle of Man, **5**, 266
The *Royal Daffodil*, **5**, 267
A Record-making Motor-boat, **5**, 268
Water-buses on the Thames, **5**, 269
An Historic Motor-boat (The *Blue Bird*), **5**, 270
A Ship is Launched, **5**, 284
The Plimsoll Mark, **9**, 399
Ropes and Sails, **9**, 400
The Ship and the Sea, **10**, 337
Colour Plates. The *Queen Elizabeth*, **5**, *facing* 256
Ships' Funnels and House Flags, **5**, *facing* 257
Photo-tone Supplement: Ships Today and Yesterday, **5**, *between* 272 and 273

Shipbuilding has been one of Britain's big industries since early times, and today employs many thousands of workers. The chief districts for shipbuilding in the U.K. are the Clyde, Tyne, Wear, Tees, Belfast, the Mersey, Barrow-in-Furness and the Humber. See *Shipyards, A Tour Through the*, **5**, 275 *et seq.*
Pictures: Taking the Water for the First Time, **5**, 275
The Keel Plate in Position, **5**, 276
Models for the Testing Tank, **5**, 277
A Ship Begins to Grow, **5**, 278
As the Work Progresses, **5**, 279
To Keep the Ship on the Right Course, **5**, 280
Fifty-five Tons of Rudder, **5**, 281
A Drill for Turbines, **5**, 282
Almost Ready for the Day of the Launch, **5**, 283
A Ship is Launched, **5**, 284
A Liner at Her Fitting-out Berth, **5**, 285
Preparing for the Comfort of Passengers, **5**, 286
An Aircraft Carrier is Launched, **5**, 287
Where Passengers Will Dine, **5**, 288

Ship Canals. The chief ship canal in Britain is the Manchester Ship Canal; others are the Caledonian and the Crinan Canal, **9**, 411

Shipley. One of the woollen and worsted towns of the West Riding of Yorkshire. It stands on the River Aire.

Ship Money was a tax imposed by King Charles I which gave rise to much opposition, leading eventually to the Civil War. John Hampden, a member of Parliament refused to pay the tax and although the courts decided against him, he was supported by Parliament, **2**, 160 ; **9**, 49
Picture: John Hampden Makes His Protest, **9**, 51

Ship of the Desert. Name given to the camel, **1**, 74

Shippea Hill is a district of Cambridgeshire having jam factories and fruit plantations, **3**, 69

Shippers' Guild House is an ancient building to be seen in the Grand Place at Brussels.
Picture: **4**, 24

Shippon is the name given in some parts of the country to the shed in which cows are kept, **6**, 384

Ships' Funnels and House Flags enable passing ships to identify the particular shipping line to which a vessel belongs, **9**, 397
Colour Plate Ships' Funnels and House Flags, **5**, *facing* 257

Shipshaw Dam is on the River Saguenay, Quebec, and harnesses the river waters to provide power for the great aluminium plant at Arvida, **3**, 195
Picture **3**, 189

Ship-Worm. See *Teredo.*

Shipyards, A Tour Through the. See *Shipbuilding*

Shiré is the name of a large South African river, a tributary of the Zambesi, **2**, 335

Shire Horse. Heavy-draught animal with broad shoulders and thick neck descended from the war horse of the Middle Ages, **1**, 97
Picture: **1**, 92

Shirley is a village of Surrey. A former vicar brought out the famous Shirley poppies.

Shirshov, Peter. Biologist and photographer of the Soviet expedition that wintered at the North Pole, 1937–38.
Picture: **2**, 362

Shirwa was one of the African lakes discovered by Dr. Livingstone, **2**, 335

Shiva is one of the gods of the Hindus. What is claimed as his footprint is found on Adam's Peak, Ceylon, **3**, 118, 343

Shivery-Shake. Name often given to the wild grass briza (*q.v.*).

Shock is the common effect of serious accidents, injuries and burns. Patients require absolute rest, warmth and hot fluids to drink, **8**, 232
Picture: **8**, 232

Shoder is the name gold-beaters give to a package containing 880 sheets of gold-beater's skin, **6**, 100
Pictures: **6**, 97–99

Shoe-Bill. A bird similar to the heron and sometimes known as the Whale-head. It is only found along the

Upper Nile. Its name comes from its large beak which is like a shoe or a boat in shape.
Shoeburyness is a coastal town of Essex the site of an artillery school.
Shogun. The title of a military leader of old Japan. Iyeyasu (*q.v.*) was one of the most famous shoguns.
Picture: At the Shrine of Iyeyasu, **4**, 259
Shooting Stars are the smallest type of meteors (*q.v.*).
Shopping Bag. A useful article easily made with canvas and coloured wools, **8**, 389
Pictures: The Completed Shopping Bag, **8**, 389
The First Row of Stitches, **8**, 390
The Covering Stitches, **8**, 390
Shore. A beam used as a prop or support. When a ship is in dry dock, and the water is being pumped out, great shores are wedged between her sides and those of the dock, as soon as she touches bottom, to keep her upright.
Shores are also used to hold up the walls of a building in which openings are being made near the ground.
Shore. See *Seashore.*
Shore Crab. The most common of our crabs, **1**, 238
Shoreham-by-Sea is a seaport, holiday resort and watering place on the coast of Sussex at the mouth of the River Adur. Lancing College is a short distance away.
Shorthand. Term applied to any system of writing by forms briefer than ordinary writing in order to record language at greater speed. Known generally as stenography in many countries, some system of brief writing was known to the Greeks and practised by the Romans.
In its modern sense, however, shorthand was first introduced by Dr. Timothy Bright of St. Bartholomew's Hospital in 1588. Pepys penned his diary in Shelton's system and later other methods became increasingly used. Thomas Gurney published his system in 1750 and his family became official shorthand writers to the Houses of Parliament. Charles Dickens was an expert in this system which is still in use.
The system known as Phonography was devised by Isaac Pitman (1813-97) and first published in 1837. It enjoyed remarkable success gradually ousting other methods as far as the British Empire was concerned. Others which have attained considerable vogue in this country are the Gregg and Dutton systems.
Shorthorn is the name of a breed of cattle found on farms all over the country. The cows are first-class milkers, **6**, 380
Short Parliament (1640) was the fourth parliament of the reign of Charles I. It lasted no more than three weeks, since it had refused to grant the King money without redress of its grievances, **2**, 161
Shoshone Dam. The highest masonry dam in the world, it is to be found in Northern Wyoming, U.S.A. It was built for irrigation purposes, **5**, 84
Shott. A *shott* is a salt lake found in north Africa. There are quite a number of them south of the Little Atlas mountains, **4**, 166
Shottery is the name of a village near Stratford-on-Avon. Here lived Anne Hathaway, who became the wife of William Shakespeare, **3**, 70
Picture: Anne Hathaway's Cottage, Shottery, **3**, 70
Shoveller. A species of wild duck and a winter visitor to our shores. It is so called because its beak is shaped very much after the style of a shovel to enable it to get its food in shallow water.
Special Colour Supplement: British Wild Birds, **1**, *between* 160 and 161 (Plate 4)
Shrew-Mole is the name given to a web-footed water-loving mole found in Northern America and other parts.
Shrew-Mouse. More correctly known as the shrew, there are three varieties in Great Britain. They are the common shrew, the pygmy shrew (the smallest of our wildlings) and the water shrew.
Shrewsbury-Holyhead Road. One of the engineer Telford's greatest works The road is 105 miles long and runs through the mountainous district of North Wales, **5**, 37
Shrewsbury is the county town of Shropshire and an important railway centre. It is a manufacturing town and has a famous public school for boys. **3**, 72
Picture: **7**, 318
Shrews, Rat. See *Rat Shrews.*
Shrike. Name of a bird family with representatives in most parts of the world. The red-backed shrike and the woodchat are seen in this country, the former being known as the butcher bird from its habit of impaling the bodies of its victims on hedges.
Shrimp. A little scavenger of the sea, nearly transparent, it is the colour of sand, **1**, 235, **8**, 80
—what is the difference between a shrimp and a prawn? **1**, 235
Shropshire (*abbrev.* Salop) is an English county on the border of Wales interested mainly in agriculture, though it has heavy industries and a small coalfield. County town, Shrewsbury.
Shrove Tuesday is the day before the first day of Lent (Ash Wednesday), **9**, 301
Shuttle is the name given to the appliance that carries the woof or crossways threads when weaving.
A simple shuttle may be made in cardboard, **8**, 383
Picture: **8**, 385
Shwe Dagon. This pagoda is one of the wonders of Burma. Its dome is gilded with gold leaf and within its shrine are eight hairs from the head of Buddha, **4**, 219 *et seq.*
Shwehmawdaw is the name of a sacred building in the Burmese town of Pegu which is said to contain two of Buddha's hairs.
Picture: **4**, 222
Siam. A country of south-east Asia which is also at times called Thailand. It is bordered on the east by French Indo-China and on the west, where it extends into the Malay Peninsula, by Burma. Bangkok is the capital and the country's population is estimated at over 18 million. Its chief product is rice, and teak cutting is an important industry. Tin-mining is a prosperous industry. The people are nearly all Buddhists, **4**, 207 *et seq.*, 374, 375
Pictures: Rama the First Bridge, Bangkok, **4**, 207
Old and New in Bangkok, **4**, 208
A Temple Guardian, **4**, 210
The Shrine of the Emerald Buddha, **4**, 210
Two Famous Temples, **4**, 211
Siamang. Name of an ape found in Malaya and Sumatra It belongs to the gibbon family and has long arms.
Siamese Cat. Has a dark face, black ears and feet and blue eyes, **8**, 314
Pictures **1**, 58; **8**, 311
Sibelius, Jean (born 1865). Famous musical composer of Finland. He has written many symphonies and tone-poems, **4**, 49; **7**, 194
Siberia is the name given to a vast territory of the U.S.S.R. (Russia) covering nearly five million square miles. It is divided into regions and is crossed by the Trans-Siberian Railway. Eastern Siberia has rich, but as yet undeveloped mineral resources. Northern Siberia contains large expanses of forest, **4**, 110
Picture: **4**, 108
Siberian Squill. See *Scilla.*
Siberian Tiger. An animal of our own times which is most like the prehistoric sabre-toothed tiger, **1**, 36
Sicily is the largest of the Mediterranean islands It belongs to Italy and is noted for its lemons, olives and other fruits. On the island is the volcano of Etna Palermo is the capital, **4**, 154, 364
Sickert, Walter Richard (1860-1942). Well-known British artist who depicted people in the streets of London, **7**, 111, 116
Sickle. A curved implement with a sharp edge used for cutting corn. Made of flint, the sickle was known in this country 3500 B.C.
Picture: **10**, 179
Sidcup is a town of Kent, virtually part of the Greater London area and a popular residential district.
Siddons, Mrs. Sarah (1755-1831). Celebrated English actress, she was the daughter of Roger Kemble.
Sidereal. Having to do with the stars. Sidereal time is time reckoned by the apparent movements of the stars round the earth
A sidereal day is four minutes shorter than a solar day, which is the time that the earth takes in turning exactly once on its axis.
Sidereal Clock. A timepiece the movements of which are regulated by observations of the stars, *i.e.*, a star clock.
Picture: **8**, 114
Siderite is a type of iron ore. It is found in the Cleveland district of North Yorkshire and other parts of this country, **6**, 44
Pictures: Getting out the Ironstone, **6**, 41
Siding means a side track of a railway. A train is shunted into a siding if another train has to pass it. Waggons are taken into sidings to be unloaded; and, like carriages, are

kept in sidings when not required for use.
Most sidings are connected with the main track at one end only.

Sidlaw Hills is a well-known range of Scotland forming the southern side of the Strathmore Valley overlooking the Firth of Tay, **3**, 114

Sidmouth is a holiday resort on the coast of South Devon, **3**, 51

Sidney, Sir Philip (1554–86). Both a soldier and a poet, he was a great favourite of Queen Elizabeth and a friend of Edmund Spenser. He was mortally wounded at Zutphen in Flanders when fighting the Spaniards.

Sidon is a port of the Lebanon and is being linked by pipe-line to the Saudi Arabian oil refinery at Ras-at-Tannura, **4**, 206

Siege Catapult. A military engine used in early days of history during a war for hurling missiles at the enemy.

Siegfried is the hero of a legend of Germany who slays a mighty dragon in the Drachenfels. He appears in the famous opera that bears his name. The Drachenfels (Dragon Rock) is a height on the banks of the River Rhine.
Picture: **4**, 66

Siegfried Line was a zone of German fortifications, on the French frontier, built by the Nazis, **2**, 248

Siemens, Ernst Werner von (1816–92). A German electrical engineer, he invented the dynamo.

Siemens, Sir William (1823–83). Famous British engineer. He invented the open-hearth system of making steel, **6**, 65

Siena is an Italian town famous for its ancient buildings, particularly its Cathedral.
Picture: **4**, 147

Sierra Do Mar is the name of the hill country on the landward side of Sao Paulo, Brazil, **4**, 312

Sierra Leone. A British colony in West Africa. The chief town is Freetown which has a large natural harbour and is an important naval base, **3**, 382
—the first British settlement (1787), **2**, 410
Picture: **3**, 384

Sierra Nevada. (1) A great mountain chain in California, U.S.A. Mount Witney is the highest peak, **4**, 273
Pictures: Where the Tuolumne Flows, **4**, 284
Photo-tone Supplement: In the Yosemite Valley, **4**, *between* 272 and 273
(2) A range of mountains in Spain about sixty miles in length, **4**, 136
Photo-tone Supplement: The Continent of Europe, **4**, *between* 112 and 113

Sieur des Grosseilliers means "Squire of the Gooseberry Bushes" and was the title chosen for himself by Medart Chouart, the French colonist who came to England during the reign of Charles II with reports of the rich fur trade to be had in Hudson Bay, **3**, 156

Sigiriya, Lion Rock of. This is found in the Dominion of Ceylon and rises sharply from a region of forestland. There was once a palace upon the rock which resisted a besieging army for thirty years.
Picture: **3**, 366

Sigismund (1387–1437). King of Hungary and ruler of the Holy Roman Empire. He visited England in 1416 and was received by King Henry V at Leeds Castle, Kent.
Picture: **3**, 36

Signal Cabin. Name given to the place from which railway signalling is controlled. Another name is signal box.
Picture. **5**, 136

Signals, Colour Light. A system of railway signalling which does without semaphores.
Pictures. **5**, 146

Signs of Rain. A Poem by Edward Jenner, **9**, 95

Signs of the Zodiac. Old-time astronomers, 2,000 years before the time of Christ, divided the skies into belts to which they gave a name and sign. The signs are these. Aquarius, the Water Bearer; Pisces, the Fishes; Aries, the Ram; Taurus, the Bull; Cancer, the Crab; Leo, the Lion; Virgo, the Virgin; Libra, the Scales; Scorpio, the Scorpion; Sagittarius, the Archer; and Capricornus, the Goat.

Sikhs form a large community in India They are found mainly in the Punjab, part of which is now included in the Dominion of Pakistan, **3**, 337 *et seq.*

Si-kiang is one of the chief rivers of China. It rises in Yunnan province and flows eastwards to enter the South China Sea near Canton, **4**, 240

Sikkim is the name of a State of India among the Himalayas and between Bhutan and Nepal. Its capital is Gangtok, **3**, 352

Silbury Hill, near Avebury in Wiltshire, is the largest artificial mound in Europe. It was built by early man, but for what reason none can say, **3**, 37

Silchester, in the northern part of Hampshire, was once an important Roman town.

Silesia. The name given to a part of central and eastern Europe which, prior to the Second World War, lay partly in Czechoslovakia and partly in Germany. The latter part consisted of the Prussian provinces of Upper and Lower Silesia. As a result of the last war, these provinces were occupied and administered by Poland. In the eighteenth century, Silesia as a part of the Austrian empire was a bone of contention between Queen Maria Theresa and Frederick the Great, **4**, 76, 79, 128
Picture: **4**, 124

Silica is a chemical compound of silicon and oxygen ($Si O_2$). It occurs in Nature as quartz and flint.
Pure silica is very hard and transparent, and able to stand great heat without melting.

Silicon. One of the non-metallic elements (symbol Si). It constitutes more of the solid matter of the earth than any other element except oxygen. At the same time, it is never found free, that is, pure, in Nature.
Its chief compound is silica. Certain other compounds are called silicates. The jelly-like substance named waterglass, in which eggs are preserved, is silicate of sodium.

Silicon Tetrachloride is a substance formed by heating sand in the presence of chlorine gas. When chemically treated it can be used in the making of various plastic substances, **6**, 378

Silk. A fibre obtained from the fine soft thread produced by the silkworm. The worm hatches from the moth's egg. At the end of a month it spins itself a protective thread and this forms the cocoon which is the raw material from which the silk is made. Britain's only silk farm is at Lullingstone, Kent. Silk fabrics are manufactured at Macclesfield, Cheshire, and in Dublin, Ireland, but China, Japan, France and Italy are the chief countries where silk fabrics are made.
See *From Silk to Rayon and Nylon*, **6**, 345 *et seq.*

Silk Cord is useful for finishing cushion covers and other work and may be made by frame knitting, **8**, 381
Pictures A Cord Made by One Person, **8**, 382
The Strands Ready to be Tied, **8**, 382

Silk-Cotton Tree. A tree to be found at Nassau, capital of the Bahama Islands. Three thousand people can shelter in its shade, **1**, 330

Silkworm is the name of a caterpillar which later becomes a moth, in the process of which the chrysalis is enclosed in a cocoon of silk The kind usually cultivated is the *Bombyx*, particularly the *Bombyx mori*, the cocoons of which supply the greater part of the silk manufactured commercially
The silkworm was first cultivated in China The caterpillar is yellowish-grey in colour and its finished cocoon about the size of a pigeon's egg, **4**, 254
– how to keep, **8**, 323
—how to pick up, **8**, 323
See *Silk*.

Silloth is a seaport, holiday resort and town of Cumberland.

Silly Symphonies. The second series of popular films, following the *Mickey Mouse* series, introduced by Walt Disney, **9**, 283

Silo is the name given to a built-up tower or a pit in the ground in which green crops are collected and stored as food for cattle and farm stock.

Silver. A metallic element (symbol Ag) lustrous white in colour in its pure state. It is widely used in the manufacture of ornaments and silver ware, such as forks, dishes, etc. Silver chloride is widely employed in photography, **6**, 101 *et seq.*
Pictures: Tapping a Silvery Stream, **6**, 101
Drake and the Spaniards, **6**, 102
Some Stages in the Process of Extraction, **6**, 104 and 105
Crude Silver in its "Jelly-Bag," **6**, 106

Silver Birch. See *Birch.*

Silver Jubilee. Term used to mark the twenty-fifth anniversary of an event. King George V and Queen Mary celebrated the Silver Jubilee of their reign in 1935, **2**, 242

Silver Y Moth. See *Moth.*

Silverweed is the name of a wild plant that sends out reddish shoots and produces yellow flowers. The hairs with which the plant is covered ac-

count for its name. Grows mostly in damp places.

Silvery Gibbon. See *Gibbon.*

Silvia. Daughter of Numitor and mother of Romulus and Remus, **2,** 47
Picture: **2,** 48

Simla is the capital of the province of East Punjab in the Dominion of India. It is the hill station for the Delhi Government during hot weather, **3,** 337

Simnel, Lambert. He claimed the English throne in 1487, when he was actually crowned King Edward VI in Dublin. In reality, he was no more than an imposter and the tool of the enemies of Henry VII. Simnel's troops were defeated, Simnel himself being pardoned and given a job in the royal kitchens, **2,** 137

Simon's Town is a port and residential town of the Cape Province, Union of South Africa.

Simplon is the name of a pass through the Alps between Italy and Switzerland. It has a railway tunnel 12½ miles in length, **4,** 64; **5,** 128

Simpson, George. A pioneer in the development of the Hudson Bay Company in Canada. He went to Canada in 1820 and soon became the Company's Governor-in-Chief. His journeys proved the existence and extent of the North-West Passage. He died at the age of thirty-eight, **3,** 158

Simpson, Sir James Young (1811 70). Scottish physician who introduced the use of anæsthetics in surgery, **7,** 384

Sims, Charles Well-known British artist, he has painted many famous pictures.
Picture: **7,** 111

Sinai is a district of Egypt to the south of Palestine. It is a desert land sparsely peopled with Bedouins.
Pictures: In the Desert of Sinai, **1,** 314

Sind. A province of the Dominion of Pakistan. Its chief town, Karachi, is also capital of the Dominion, and has an important salt industry. Hides, skins, and wheat are exported. The main river is the Indus, and its waters are used by an irrigation scheme that is the largest of its kind in India, **3,** 343, 344

Sindbad the Sailor. A character in the *Arabian Nights' Entertainments* (*q.v.*) who relates the marvellous adventures he had during his seven voyages.
Picture: Myth and Legend (Sindbad and the Old Man of the Sea), **10,** 195

Singapore. Formerly one of the Straits Settlements, but now a British Colony, Singapore stands at the southernmost tip of the Malay Peninsula. It is an island, and is about 26 miles long and 14 miles wide. Also included in the Singapore colony are the Cocos or Keeling Islands and Christmas Island (Indian Ocean), **3,** 403
—a British possession under the Treaty of Vienna (1815), **2,** 208
—taken by the Japanese, **2,** 252
Picture: **3,** 401

Singbhum. A district of the province of Bihar in the Dominion of India which has important iron ore mines, **3,** 314

Singhalese. This is the name given to the people of the Dominion of Ceylon. It is also spelt Cingalese, **3,** 361
Picture: **3,** 362

Single Crochet, is, apart from chain, the simplest kind of crochet, **8,** 400

Sinhalas. An ancient Eastern people from whom the Singhalese claim descent, **3,** 361

Sinkiang is the westernmost province of China and much of it is occupied by the Takla-Makan desert. It has Mongolia to the north and Tibet to the south; westward lies Soviet Russia. The capital is Tihwa, formerly known as Urumchi. The population numbers some 4 millions, **4,** 238

Sinn Fein (*pron.* shin-fane). The name of the Irish Nationalist party, founded in 1905. Under De Valera it became the centre of the republican movement, but after 1922 it ceased to exist as a party, **2,** 241

Sioux is the name of a tribe of Red Indians.

Sioux City is a large town of Iowa, U.S.A., standing on the River Missouri.

Sirens. Amphibious animals, olive-green in colour and eel-like. Found in parts of the U.S.A.

Sirens, The, and Scylla and Charybdis. A Tale from the Greek, **5,** 380

Siric. Archbishop of Canterbury in the time of King Ethelred. He suggested the Danegeld, a means of buying off the Danish sea raiders, **2,** 90

Sirius is known as the brightest star in the Northern Hemisphere, but it is 50 billions of miles from the earth or 8½ light years, **8,** 174

Sirius was the name of the first British vessel to cross the Atlantic under steam only. From Queenstown to New York took 19 days, **8,** 31
Picture: **8,** 35

Sisal. The fibre of the agave plant used for making rope and string.
Pictures: Cutting Sisal on a Kenya Plantation, **4,** 369
African Sisal for String and Rope, **4,** 369

Siskin. A small bird of the finch tribe; one of our summer visitors. Black head with much primrose-colour plumage.

Sitka Spruce. Name of a tree introduced into this country, where it is found to flourish, **1,** 326

Sittingbourne. A town and port of Kent. It is noted for its oysters.

Siva. See *Shiva,* which is an alternative spelling.

Size. Thin glue. Paper-hangers treat a wall with a solution of size and water before fixing the paper; and before a ceiling is whitewashed it is "primed" with a mixture of size and whiting.
Size is also mixed with the whitewash itself, to prevent it flaking off when dry.

Skagerrak is the name of the strip of water between Norway and Denmark.

Skagstolstind is a mountain peak of Norway. It is over 8,000 ft. in height, **4,** 36

Skagway is a North Pacific coast port of Alaska. Oil is piped to it from Norman Wells on the lower Mackenzie River in the North-west Territories of Canada, **3,** 166

Skarsfos is a famous waterfall of Norway, **4,** 37

Skate. A fish of the Ray type, much flattened but not a true flatfish, **1,** 223, 228
Picture: Empty Egg-shell of the Skate, **1,** 229

Skeleton. The hard framework of bones and cartilage of an animal. Human beings, birds, most four-footed animals, and fish have their skeletons surrounded by flesh or skin.
In the case of turtles, tortoises and many other creatures the skeleton is on the outside, in the form of a strong protective shell

Skerries is the name given to small rocky islets in the sea, **4,** 45

Skewbald. Term applied to a horse whose coat is white, mixed with red or brown or any similar colour.

Ski is the name given to a special kind of "snow-shoe" made for travelling rapidly across snowy hills and slopes. Skis are made of wood and are long and narrow, and are made to lock on to one's boots. Ski-ing is a feature of any winter sports resorts, especially those of Norway and Switzerland, **4,** 36
Pictures: Where Scott of the Antarctic Trained, **4,** 35
Lined Up and All Ready for the Start, **4,** 53
In Scheidegg's Winter Snows, **4,** 63
In the Tyrol of Austria, **4,** 89

Skibbereen. A town and seaport of County Cork, Eire It is an important fishing centre.

Skiddaw, in the English Lake District, is 3,054 ft. in height, **3,** 90

Skimmer. A curious water-bird which catches its food by forcing its beak through mud and water. It is not unlike the tern.

Skin is the living garment with which our bodies are covered. It has fine nerves and regulates our temperature. It contains the sweat glands, **8,** 212
Pictures Worn-out Skin Cells, **8,** 210
What the Skin is Made of, **8,** 211
Two Layers of the Skin, **8,** 213

Skink is the name given to land lizards. They are found in many parts of the world where the earth is dry

Skip-Jack is another name for click beetle (*q.v.*).

Skipper is the name of a family of British butterflies. They are mostly brown and yellow in colour.

Skipton is one of the textile towns of the West Riding of Yorkshire.

Skirmish means a small fight. The men who built the first railway across the United States to the Pacific had many skirmishes with bands of Indians.

Skoda is the name of an important steel works and former munitions factory at Pilsen in Czechoslovakia. It now manufactures railway engines, cars, and agricultural machinery, **4,** 92

Skua. Name of a variety of sea-gull some of which are seen in Great Britain. They are large birds with brownish feathers. See *Gull.*

Skunk. An animal akin to the weasels, It is found in North America. Its

fur has a high value. Skunks give forth an unpleasant smell when molested.

Skye is an island of the Inner Hebrides, off the north-west coast of Scotland. Woollen homespun is made by the islanders, **3**, 139
Picture: **3**, 137

Skylark. See *Lark*.

Skymaster, Douglas. Name of a well-known American passenger transport aeroplane. It is used by several of the big air lines.
Picture: A Skymaster over Johannesburg, **3**, 289

Skyscraper is the name given to the extremely tall building, often erected on comparatively small plots of ground. This type of building developed considerably in New York owing to the limits of Manhattan Island on which the city stands. As there are solid rock foundations the buildings are perfectly safe. Similar high buildings are also common nowadays in Canada and in other countries of America, **4**, 268 ; **7**, 329
Pictures: New York by Night, **4**, 270
An English " Queen " at New York, **4**, 271
Looking up at the Rockefeller Center, **4**, 275
Looking Down on New York, **4**, 276
Among the Clouds, **4**, 277

Slag is the waste matter from a smelting or steel-making furnace It is drawn off from above the molten metal. Steel slag is broken up and used in road making.

Slander. A false tale or report, spread with intent to injure somebody's reputation. Slander is spoken; libel is written and they are both punishable by law.

Slane. This is the name given to the special spade used by the Irish for cutting turves, *i.e.*, peat.
Picture: **3**, 143

Slaney is a river of southern Eire. Upon it stands Wexford, **3**, 152

Slang. Words and phrases in common use, but not recognised as standard English. Different classes have their own slang : schoolboys, Forces, sports, etc. " Mug " is slang for " foolish person " or for " face."

Slate is a variety of rock, formed originally from clay. When quarried and prepared it is much used for roofing purposes, cisterns, etc. We have extensive slate quarries in North Wales, **3**, 100
—why it splits easily, **9**, 317
Picture: **3**, 101

Slatees were African merchants who dealt chiefly in slaves, **2**, 322

Slate Pencils are made largely from waste slate and the dust of slate. They are used for writing on slates which were once seen in every school, though other material has now taken their place.

Slaughter. Two Cotswold villages bear this name, Upper Slaughter and Lower Slaughter. The name comes from " sloe-tree," there being many trees of this kind in the district, **3**, 24

Slavery. Slaves, servants who had no rights and could be treated as their master or mistress pleased, were a common feature of the ancient world, and also of the Middle and Far East. In more recent times, Negroes from Africa were shipped to the New World and sold as slaves, this profitable but horrible trade being engaged in by many European nations, including our own. Britain abolished slavery within the Empire by Act of Parliament in 1833, **2**, 411
—the Slave Traders on the Gold Coast, **3**, 380
—slavery in America, **4**, 262

Slavonia. See *Slovenia*.

Sleaford, centre of a large agricultural district, is a market town of Lincolnshire. It stands on the River Slea.

Sleepers is the name given to the wooden baulks on which railway lines are laid, **5**, 132

Sleet is a mixture of rain and snow or hail. It has a way of clinging to things and changing into ice. Great damage is done to telegraph and telephone lines by sleet storms, when the wires become encased in ice until the weight on the poles may be increased sixty or seventy times above the normal.
The great strain then snaps the wires or brings the poles down.

Slender Dog. A curious, fox-like animal, the wild dog of the Argentine.
Picture: **1**, 84

Slewing is a term used in basket-making. It applies to weaving the rounds with two or more weaver canes, **8**, 391

Slieve Bingian is one of the major peaks of the Mountains of Mourne, Ireland.
Picture: **3**, 147

Slieve Donard is one of the major peaks of the Mountains of Mourne, County Down, Ireland. It is 2,796 ft. high.
Picture: **3**, 147

Sligo is a county of the Republic of Ireland in the Province of Connaught. It forms chiefly a farming district.
Sligo is the county town, standing on the bay of the same name.

Slip is the term used to describe the wet paste with which a potter makes his wares, **9**, 195

Slipway is a great flat floor of concrete or wood on which a ship is built. It has to be strongly constructed and is usually on piles driven deep into the ground, **5**, 282
Pictures: Sliding Down the Slipway, **5**, 284
An Aircraft Carrier is Launched, **5**, 287

Sliver is a term used in cotton mills. It refers to a web of cotton as drawn through a funnel, **6**, 338
Picture: **6**, 340

Sloe. A hedgerow shrub with white blossoms before the leaves appear. Known as the blackthorn, its blossoming-time is often called blackthorn winter. It is a wild plum, **1**, 306
Picture: **1**, 347

Slogan. Words or a phrase used to further some cause or object. Originally the word meant a Highland war-cry.

Sloop. A single-masted small vessel having a bowsprit and being rigged like a cutter.

Sloth Bear. Native of hilly country in India and Ceylon. Feeding on honey, fruit, insects, etc., it has a shaggy black fur coat and is sometimes known as the Honey Bear, **1**, 64

Sloth, Giant. A prehistoric animal 20 ft. long.
Colour Plate: **1**, *facing* 36

Sloths live almost entirely in trees and feed upon foliage and berries. They are active only by night and are found in South America.

Slough, in the south of Buckinghamshire, has developed into a large manufacturing town and has extensive factories and engineering works.

Slovakia is a mountainous district of Czechoslovakia. Its capital is Bratislava, **4**, 91

Slovenia is a federal unit of Yugoslavia in the same way as it was a province of the old kingdom of Yugoslavia. Ljubljana is its capital, **4**, 90, 94

Slow Lemur. A monkey-like animal. There are two species, one African and the other Asiatic. The creatures appear only by night and are not active like true lemurs.

Slow-Worm and the Lizard, The. The story of these interesting creatures, **1**, 149
Pictures: **1**, 148, 149, 150

Sloy, Loch, lies above Loch Lomond in Scotland, and here is Britain's largest hydro-electric station, **5**, 70
Pictures. **5**, 70, 71, 72

Sloyd is a Swedish system of training in the use of tools given at school, **9**, 407

Slug. A member of the family of land molluscs. It has no visible shell like a snail.

Sluice means a passage-way for water, fitted with a sliding door which controls the flow.

Slump means a heavy fall in prices A slump is the reverse of a boom and due to a sudden decrease in the demand for shares, goods, etc

Sluys, Battle of, 1340. Fought by Edward III against the French, it drove the enemy's ships off the seas, **2**, 125; **8**, 2

Slyping is a term used in basket-making. It consists of paring down a cane so that half the thickness is left at the end, **8**, 392
Picture: **8**, 394

Smallhythe is the name of a house at Tenterden, Kent, where Ellen Terry, the great actress, lived, **3**, 415

Smee. Name sometimes given to the waterbird *Smew* (*q v.*).

Smelt is the name of a sea fish found round the coasts of Britain. It is related to the salmon.

Smetana, Frederick (1824–84). A great composer, he was the founder of modern Czech music, **7**, 185

Smethwick is an industrial and manufacturing town of Staffordshire.

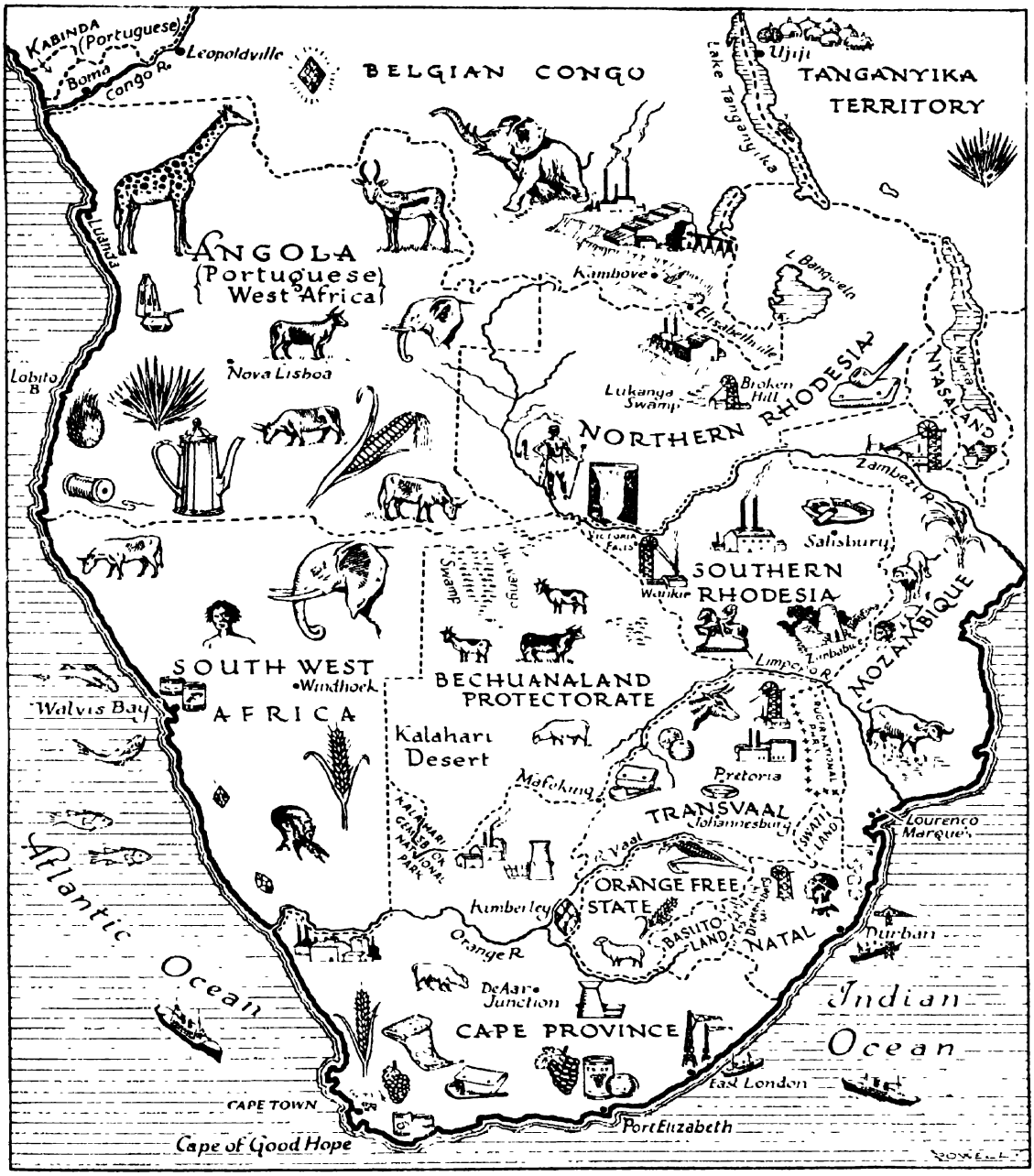
Smew. A sea-coast and river-loving bird, one of our winter visitors. It dives for much of its food and can pursue fish under water.

Smiles, Samuel (1812–1904). English scholar and writer, his most famous work is *Self Help*.

Smith, Adam (1723–90). A well-known British economist. He wrote the *Wealth of Nations*, which had a great deal of influence, **7**, 365

Smith, Sir William Sidney (1764–1840). English Admiral who defended Acre

PICTORIAL MAP OF SOUTHERN AFRICA



Specially drawn for this work

In this map the products and industries of the southern part of Africa are illustrated. Foremost among the different territories is the Union of *South Africa* (see p. 352), which includes Cape Province, Natal, Transvaal and Orange Free State, while South-West Africa has been administered as an integral part of the Union since 1919. Fruit, maize, wheat and tobacco are grown; iron and steel are manufactured, and diamonds and gold are obtained. Both Northern and Southern Rhodesia are also British, while Bechuanaland and Nyasaland are British Protectorates. In Rhodesia gold and other minerals are mined; fruits, cotton, tobacco and maize are grown. Mozambique and Angola are Portuguese, while Belgium has her Congo colony.

against Napoleon in 1799, with such success that Napoleon had to abandon his siege of the place, **2**, 198

Smoked Glass. A piece of glass that has been smoked in a candle flame. Such a piece should be used to protect the eyes when examining the sun, **8**, 120

Smolensk is a district of Soviet Russia through which flows the River Dnieper. It has a capital of the same name.

Smollett, Tobias George (1721-71). A widely-read British novelist, he wrote *Humphrey Clinker* and *Roderick Random.*

Smolt is the name given to a young salmon when, at about a year old, it sets out for the sea from the river where it was hatched.

Smooth Snake. A harmless British snake; related to the common grass snake, but shorter, **1**, 146

Smörrebröd is a national dish of Scandinavian countries. It consists of small helpings of a great variety of things, eaten together, **4**, 47

Smuggling is the offence of defrauding the revenue by evading customs duties, or by importing or exporting prohibited goods into or from a country. For more than a century from about 1730 onwards it became an organised industry in the coastal areas of southern England in particular. Tea, tobacco, brandy and fine laces were among the most important articles in which the smugglers dealt.
Like piracy, the coming of the steamships in place of sails dealt a mortal blow to smuggling and it ceased to be a profitable business in the early years of Queen Victoria's reign, though there has been some revival in recent years, **8**, 58
Picture A Revenue Cutter Overhauls a Smuggler, **8**, 56

Smuts, Field Marshal the Rt. Hon Jan Christian, O.M. (1870-1950). One of the outstanding personalities in both of the World Wars. Premier of the Union of South Africa. He visited England frequently and was regarded as one of the Commonwealth's "elder statesmen." In 1947 he received the O.M. and became Chancellor of Cambridge University in 1948, **3**, 280

Smyrna. A port of Asia Minor belonging to Turkey and noted for its carpets. It exports gums, **1**, 334

Smyth, Dame Ethel (1858-1944). Held first place among women musical composers. She was also a talented conductor. *The Boatswain's Mate* is one of her famous operas.
Picture. **7**, 191

Snae Fell, over 2,000 ft. in height, is a mountain of the Isle of Man.

Snail, Giant. See *Giant Snail.*

Snails may be placed in two groups, land snails and water snails. They belong to the mollusc family and are found in all parts of the world.
—Ramshorn and water snails may be put into the aquarium with goldfish, **8**, 319

Snail, Sea. See *Sea Snail.*

Snake Bite. See *Adder Bite.*

Snake-Charmers, to be found in India and Egypt, give exhibitions of their art at the roadside.

Snake Column. This is a monument which can be seen in Istanbul. Its other name is the Obelisk of Theodosius I and it came from Delphi. Upon the column were once the names of the Greek cities which took part in the victory of Platæa (479 B.C.), **4**, 160

Snake-Head is the name given to an African fish that crawls over mud and sand.

Snake Park is a place at Port Elizabeth where specimens of snakes to be found in South Africa are exhibited. *Picture.* **3**, 280

Snakes and Lizards. A section about these reptiles, limbless and otherwise, **1**, 141 *et seq.*
—how does a snake get along? **1**, 142
Pictures: The Green Tree Boa, **1**, 141
Seven Men versus One Python, **1**, 142
Boa Constrictor, **1**, 143
Cobra, Front and Back View, **1**, 144
At Very Close Quarters, **1**, 145
Rattlesnake: Showing Tail and Our Only Poisonous Snake, **1**, 146
An Inoffensive Creature, **1**, 147
Slow-Worm, Viper and Grass Snake, **1**, 148
Slow-Worm, **1**, 149
Common Lizard, **1**, 150
A Tongue Like a Telescope, **1**, 151
Bearded Dragon Lizard, **1**, 152
Iguana Poses for His Picture, **1**, 153

Snake's Head Plant. Name given to the wild fritillary, which has drooping spotted flowers.
Picture: **1**, 303

Snapdragon is the popular name for the plant *Antirrhinum*, **8**, 278
Picture. **8**, 275

Sneezing is involuntary and we have no control over it. Why do we sneeze? **8**, 228

Sneeze-Wort. A familiar wild plant with narrow leaves. The flowers are daisy-like.

Snipe. A wading bird some 10 in. in length to be found in marshy places.

Snow is formed of crystals of water or moisture vapour, each flake consisting of crystals in such a way that there are no two alike
Picture. In the Canadian Rockies, **5**, 5

Snowball Tree. Name given to the shrub viburnum opulus sterile which produces large white heads in June but no berries.

Snowdon is the highest peak south of the Tweed and is 3,500 ft. high, **3**, 100 *et seq.*
Pictures: The Highest Peak South of the Tweed, **3**, 106
The Highest Railway in Britain, **3**, 108

Snowdonia is the name given to the district of North Wales in the neighbourhood of Snowdon, **3**, 100 *et seq.*
Pictures: Snowdon, **3**, 106
Snowdonia's Wild Beauty, **3**, 107
The Highest Railway in Britain, **3**, 108

Snowdrop. One of the most delightful of the spring bulbs. Thrives in partial shade. (*p.h.*)

Snow-Leopard. See *Ounce.*

Snow-on-the-Mountain. Name given to the popular rockery and edging plant arabis. It is also known as wall cress.

Snow Shoes have a framework of wood interlaced with webbing made from strips of skin. They are used in arctic regions; and, having a broad surface, support the wearer on snow, **3**, 164

Snow White and the Seven Dwarfs was the title of Walt Disney's first full-length film done by animated cartoons. It had great success with cinema audiences everywhere.
See *The Art of Walt Disney*, **9**, 279 *et seq.*
Pictures. **9**, 279, 282, 285

Snowy River. A river of the Australian Alps which gives its name to a great new hydro-electric scheme involving the Snowy and other rivers, **3**, 213
Picture: **5**, 81

Soapwort. A wild plant having erect stems and long slender leaves, with flowers growing in clusters. The leaves in water form a lather but the plant is poisonous, **1**, 350

Soar. A river of Leicestershire, though it rises in Warwickshire. It joins the Trent near Derby.

Sobieski, John. A warrior king of Poland whose army saved Vienna from the Turks in 1683, **4**, 90

Social Wasp. Name given to the common wasp. See *Wasp*

Society Islands, of which Tahiti is the largest, belong to France. They are to be found in the South Seas

Sociology is the scientific study of human life in organised communities. In this way the sociologist endeavours to bring about changes which will make for the progress and happiness of mankind. A British learned society, the Sociological Society, founded in 1905, was formed to promote the study and advance the education of society generally in social science, **7**, 396

Socotra. An island forming part of Britain's protectorate of Aden. The island is in the Indian Ocean off the north-eastern tip of Africa. Its name is sometimes spelt Soqotra, **3**, 388

Socrates (fifth century B.C.). Greatest of the Greek thinkers and philosophers, **2**, 35, 402; **7**, 344
Pictures: Socrates, **2**, 35
His Prison at Athens, **2**, 35
The Cup of Hemlock, **2**, 37
The Last Discourse, **7**, 339

Sodium is a soft white metal, one of the elements. Its chemical symbol is Na and its weight slightly less than that of water
We are all very familiar with the combination of sodium and chlorine, called salt, and with washing soda, another compound containing it.

Sofia is the capital of Bulgaria and is an old fortress town built originally to dominate the Dragoman Pass, **4**, 97

Soft Mash is a form of food prepared for poultry, **8**, 318

Soft Solder, with which pieces of tinplate are joined together, is a mixture of tin and lead, **6**, 128

Soft Woods. Description given to the timber of coniferous trees, **1**, 322
—three-quarters of our sawn timber is cut from soft woods, **1**, 323

Sogne Fjord is the longest of these inlets into the coast of Norway. It penetrates inland from the sea for more than 100 miles, **4**, 38

Sojourner is one who stays in a place for a time only. If Jones, who lives in London, spends a week with a friend, Brown, who resides in Bournemouth, he is merely a sojourner in Bournemouth, as opposed to residents who have their home there.

Soke. Name of an area of country round Peterborough, Northants

Sokoto. The name of a province of northern Nigeria in British West Africa which has important cotton-fields, **3**, 382

Solan Goose. See *Gannet.*

Solar means something pertaining to the sun A solar eclipse is an eclipse of the sun. If we were deprived of solar heat, that is, heat from the sun, we should perish of cold.

Solar Halo. A clearly-defined half-circle round the sun.

Solar Spectrum. Name given to a strip of bands of colour as seen in the pendant of a chandelier, a bevelled edge of a mirror, and so on. The order of the colours never varies, **5**, 105

Solar System. The sun and the nine planets with their satellites which revolve round it are known as the "Solar System" The earth is one of the nine planets, each of which has its own path or "orbit." The moon is a satellite of the earth and moves round it just as the earth moves round the sun There is a host of smaller bodies in the Solar System More than a thousand minor planets have been discovered, and there are innumerable comets and meteors in the immense space covered by the system See *The Wonders of the Heavens*, **8**, 107 *et seq*
Pictures: The Planets and the Sun, **8**, 107
The Solar System, **8**, 108

Sole. One of the flatfish Its flesh is much esteemed at table, **1**, 220

Sole, Lemon. See *Lemon Sole*

Solent. A portion of the sea channel which divides the Hampshire coast from the Isle of Wight It is much used for yachting, **3**, 37

Soliacо, Henry de Was Abbot of Glastonbury during the reign of Richard I It was while he was Abbot that the reputed burial-place of King Arthur and Queen Guinevere was found, **3**, 58

Solitary Wasp. This insect is smaller in size and darker in colour than the so-called Social Wasp. It makes holes in the ground and does not build a nest, **1**, 264

Solo means by oneself An airman makes a solo flight when he is alone in the aeroplane A song is a solo if sung by or written for a single voice

Solomon (died about 937 B.C.) was the son of David and became King of Israel. He built the Temple at Jerusalem, **3**, 301; **4**, 174
Pictures : The Temple Area, Jerusalem, **4**, 183
The Temple of King Solomon, **9**, 9

Solomon Islands. A British protectorate in the Pacific consisting of a number of islands and groups of islands. The largest island is Guadalcanal and this is also the government headquarters. Part of the Solomon Islands which is near New Guinea is administered by the Commonwealth of Australia, **3**, 390
—the scene of a Japanese naval defeat in the Second World War, **2**, 252
Picture: **3**, 392

Solomon's Seal is a popular perennial plant bearing blooms like suspended white bells.

Solon (638-558 B.C.). A famous Greek, known as the law-giver, he came from Athens and was an adviser of King Crœsus, **2**, 1, 17
Picture: With King Crœsus, **2**, 2

Solstices, or "standing still" points, mark the extreme north and south limits reached by the sun The summer solstice comes on June 21st (the longest day), and the winter solstice on December 21st (the shortest day)

Solway Firth, about forty miles in length, separates southern Scotland from north-west England. It is an arm of the Irish Sea and has extensive fisheries.
Between the Solway Firth and the Tyne runs the famous wall of the Roman emperor, Hadrian (*q.v.*), **2**, 403; **3**, 83, 109

Somaliland is a district of north-east Africa under British rule, though there is also *French Somaliland.* The capital of British Somaliland is Berbera (*q.v.*)

Somaliland, French. This part of the French Union lies between British Somaliland and what was Italian Somaliland, and looks out on to the Gulf of Aden Djibouti is the capital and main port

Someone. A Poem by Walter De La Mare, **9**, 91

Somerset is a county of south-west England having a long coast-line to the Bristol Channel It contains the Mendip and Quantock Hills and has the Parret, Bristol Avon and Frome among its rivers It is noted for its fruit and agricultural products
Bath, Weston-super-Mare, Yeovil and Taunton are towns of Somerset, the last-named being the county town, **3**, 56
Pictures Village Craftsmen at Work, **3**, 55
Cheddar Gorge, **3**, 56
Clifton Bridge, **3**, 56
Unusual Arches in Wells Cathedral, **3**, 57
The Abbot's Kitchen at Glastonbury, **3**, 77
The Charm of an English Village, **3**, 77
Where Dunkery Beacon was Lighted, **3**, 411

Somerset, Duke of An ancient British title dating from the fourteenth century
—Edward Seymour, Duke of Somerset, was Protector to the boy King Edward VI, **2**, 142

Somers, Lord (1887-1944). A distinguished British soldier and for a time Governor of Victoria, he was nominated as his successor by Lord Baden-Powell and became Chief Scout of the British Commonwealth in 1941.

Somervell, Dr. He was one of the climbers in a Mount Everest Expedition, **2**, 389

Somme is the name of both a river and a department of France, of which Amiens is the capital It is a centre of sugar-refining Desperate fighting took place in the district in the war of 1914-18, **2**, 238

Song of the South. The name of a Disney film concerned with one of the "Uncle Remus" tales about Brer Rabbit, Brer Fox and the Tar-Baby.
Picture: **9**, 291

Song-Thrush. See *Thrush.*

Sonnet. A poem of fourteen lines, of ten syllables each. The original form used by its inventors, Italian poets, had a group of eight lines followed by a group of six, the lines of each group rhyming among themselves.
Shakespeare adopted a group of twelve alternately rhyming lines, followed by a rhyming couplet (two lines). Milton adopted the Italian form.

Sons of Liberty. Name given to bands of English settlers in America who resisted the demands of the government at home, **2**, 191
Picture: **2**, 191

Soochow is a city of China in the province of Kiangsu.
Picture **4**, 241

Sooneck, Burg. See *Burg Sooneck.*

Soot is a dirty powder which comes from the smoke of coal. In one year nearly 400 tons of soot to the square mile fall on London, **6**, 22

Soothsayer. A diviner, one who foretells the future. When Nebuchadnezzar had a dream which troubled him he summoned his soothsayers, and asked them to tell him what it meant.
They failed, but the prophet Daniel succeeded in giving the interpretation

Sophia (1630-1714), Electress of Hanover, mother of King George I of Great Britain and a grand-daughter of King James I. The succession to the British throne (on the death of Queen Anne) was vested in her and her son by the Act of Settlement (1701), **2**, 178

Sophocles (*c.* 496-405 B.C.). Celebrated Greek dramatist. Seven of his wonderful tragedies remain to us, **2**, 402; **7**, 121

Soprano is the highest kind of singing voice. A woman with such a voice is called a soprano, while a boy is a treble
An ordinary four-part song is sung by sopranos, altos, tenors and basses, the first usually singing the uppermost notes forming the air.

Sopwith. Name given to various aeroplanes built by the British airman T. O. M. Sopwith The Sopwith Pup was one example and the Sopwith Camel another, **5**, 199, 200

Sorata, in Bolivia, is a mighty peak of the Andes Mountains rising to 21,000 ft., **4**, 330

Sorb. Another name for the Service Tree (*q.v.*).

Sorghum. A large kind of millet, often used for animal foodstuffs. Its stalks are used for roofing and fences in some parts of the world, in particular China and the Sudan, **3**, 207

Sorrel. See ***Common Sorrel*** and ***Wood Sorrel.***

"Sorrow of the Sons of Han" is the name given to the Hwang Ho, or Yellow River, of China on account of its terrible floods, **4**, 240

Sorting Office. A department of every large postal centre. Here letters are sorted into frames each containing forty-eight pigeon-holes, **6**, 280
Picture: **6**, 279

S O S means Save our Souls, an appeal usually made by wireless from ships in great distress.

Soufrière. A volcano on the island of St. Vincent in the West Indies, **3**, 396

Souk. A word used along the North African coast to indicate the Arab market in a town. It is sometimes spelt *suk* and sometimes called *socco*, **4**, 166
Picture: The Great Souk at Tangier, **4**, 165

Soult, Nicolas (1769-1851). French soldier who became a marshal of France under Napoleon, **2**, 202

Sound. The term applied to the cause and to the sensation of hearing. All sound originates in a vibration which travels in all directions through the air. The frequency of the vibration determines the pitch of the sound, but the speed at which it travels is unaffected. The subject is dealt with in *The Marvels of Sound*, **5**, 109
Pictures: One of Mother Nature's Sounding Boards, **5**, 109
How Strings Carry Sound, **5**, 110
The Bell Buoy Warning to Ships, **5**, 111
Waves of Sound when a Bell Rings, **5**, 112
The Principle of the Fiddle String, **5**, 113
Measuring Distance by Echo, **5**, 114

Sound-Recording. For the purpose of the moving picture, the recording of the necessary sounds—the human voice, the musical instruments and the other sounds is an important process The sounds are printed on the edge of the film, **9**, 273, 275-277.

Sounds, How they are Written Down. About the phonograph, dictaphone, gramophone, etc., **6**, 167 *et seq*
See *Dictaphone, Edison, Gramophone and Phonograph*

Sound, Speed of. Sound travels through the air at the rate of 1,120 ft. a second, but through water its speed is nearly a mile a second, **5**, 113

Sound, The. This is one of the entrances to the Baltic Sea and runs between the coast of Sweden and Denmark's largest island of Zealand, **4**, 46

Sousa, John Philip (1854 1932). Well-known American musical conductor who wrote the *Washington Post* and many other outstanding pieces.

South Africa House, in Trafalgar Square, London, is the headquarters in the Commonwealth capital of the Government of the Union of South Africa.
Picture: **3**, 18

South Africa, Union of. Formed in 1910, the Union is a member nation of the great world family known as the British Commonwealth of Nations. It consists of the provinces of the Cape of Good Hope (Cape Province), Natal, Transvaal, and the Orange Free State, and Prince Edward and Marion Islands. The Union also governs South-West Africa under the League of Nations mandate of 1920. The Government offices and administration of the Union are at Pretoria, and the Houses of Parliament at Cape Town. The population of the Union is over 11 million and the great majority of these are Bantu people, **3**, 275 *et seq.*
—Royal Tour of South Africa (1947), **2**, 259
—South Africa united, **2**, 412
—South African products, **4**, 382
Picture: Fruit from South Africa, **4**, 373
Pictorial Map: **10**, 349

South African War, or Boer War Names given to a conflict between the British and Boers of the Transvaal and Orange Free State, 1899 1902, **2**, 220, 222, 225, 412; **3**, 280

South America forms the southern part of the land of the Western Hemisphere, stretching from Cape Galinas in the North to Cape Horn in the South, a distance of 4,500 miles, while its maximum width is 3,200 miles. Brazil is the largest country with Argentina next (See Argentina, Brazil, Chile, and other South American countries).
Colour Plate: Fishing With Bow and Arrow, **4**, *facing* 300

Southampton. County borough and seaport of Hampshire standing between the mouths of the Test and Itchen Rivers. One of the most important shipping centres, it caters for the largest Atlantic liners. It has double tides, **3**, 36
Pictures: **3**, 30, 31, 38
Photo-tone Supplement: Modern Architecture (Southampton Civic Centre), **7**, *between* 288 and 289

Southampton Water is formed by the estuary of the Rivers Test and Itchen and has the great port of Southampton at its head, **3**, 36

South Australia is one of the states of the Commonwealth of Australia It has important grain crops and a flourishing pastoral industry. Dried fruits and wines are also produced, and there are important mineral resources. The state capital is Adelaide, **3**, 220 *et seq.*
Pictures: Loading Hay Near Adelaide, **3**, 221
Adelaide From the Air, **3**, 226
Pictorial Map **3**, 243

South Carolina is a State of the U.S.A It yields cotton and tobacco and a great wealth of farm produce. The capital is Columbia.
Pictorial Map: **4**, 291

South Dakota is a State of the U.S.A. Its chief interests are those of agriculture, but its famous Black Hills yield much timber. The capital is Pierre.
Pictorial Map: **4**, 290

South Downs. Name given to a range of chalk hills which approach the sea in Sussex and Hampshire, **3**, 33

South-East Trades is the name given to winds that blow across Australia from the Pacific, **3**, 210

Southend-on-Sea. Popular holiday and residential resort at the broad mouth of the Thames. It is a county borough of Essex, and 43 miles from London, **3**, 60

Southern Alps is the name given to the mountain backbone of South Island, New Zealand, **3**, 254 *et seq.*
Pictures: Mount Cook, **3**, 253
The Great Tasman Glacier, **3**, 253
Photo-tone Supplement: From Volcanoes to the Southern Alps, **3**, *between* 256 and 257

Southern Cross. The name of the ship used by the British Antarctic expedition financed by Sir George Newnes (*q.v.*), **2**, 368

Southern Cross is the name of a group or constellation of stars. In this constellation dark nebulæ are found, **8**, 178

Southern Cross, an aeroplane used by an Australian pioneer of long-distance flights, **5**, 205
Picture **5**, 205

Southern Rhodesia. See *Rhodesia, Southern.*

Southernwood is a fragrant bush with feathery foliage often known as "Old Man." Proper name *Artemisia.*

Southey, Robert (1774 1843) An English poet and man of letters. His *Life of Nelson* is well known. He became Poet Laureate.
—the Cataract of Lodore, **3**, 88

South Georgia, a British whaling station in the South Atlantic The island was discovered by Vespucci, **2**, 281, 314

South Island is one of the two main islands of New Zealand. It contains the mountain backbone of the Southern Alps, **3**, 254
Pictures Mitre Peak, Milford Sound, **3**, 252
In the Southern Alps, **3**, 253
Across Cook Strait, **3**, 259, 261
Sights and Scenes in New Zealand **3**, 267, 268
Christchurch Cathedral, **3**, 270, 273
Remarkable Cloud Formation, **5**, 26
Photo-tone Supplement New Zealand Scenes, **3**, *between* 256 and 257

South Kensington is a district of London noted for the museums which it contains, which are the outcome of the Great Exhibition of 1851. They include the Natural History Museum, which has collections that were formerly at the British Museum; the Victoria and Albert Museum, containing a splendid collection illustrating arts and crafts, and the Science Museum, showing the scientific progress of mankind and containing many working models.
Picture. **3**, 13

South Pole is a terminus of the earth's axis. Its exact position is on an elevated ice plateau, covered by an ice sheet. It was first reached by Amundsen in December 1911 and then by Scott barely a month later. **2**, 412
See also *Antarctic, Heroes of the; Amundsen; Scott.*
Photo-tone Supplement: In the Polar Regions, **2**, *between* 368 and 369

Southport is a large seaside town and holiday resort on the coast of Lancashire.

Southsea, a holiday resort of Hampshire. It is now part of Portsmouth.

South Sea was the name given by ancient navigators to the great ocean beyond the shores of South America. It should not be confused with South

Seas, the name given to the island-studded south-western Pacific, **2**, 283

South Sea Bubble. The name given to the wild speculative schemes which brought about the terrible English financial crash of 1719 20, **2**, 180, **9**, 326
Picture: **2**, 181

South Sea Company. This company had the sole right to trade with South America. Its apparent prosperity brought about the formation of other companies and a period of wild speculation afterwards known as the South Sea Bubble (*q.v.*), **2**, 180

South Shetland Islands. These islands of the South Atlantic are grouped in the British colony of the Falkland Islands and its dependencies.

South Shields is an important shipbuilding town of County Durham and stands at the mouth of the River Tyne, **2**, 398, **3**, 81

South Stack is the name of a lighthouse on the Anglesey coast, **3**, 103
Picture: **3**, 103

South Uist. See *Uist.*

South Wales Coalfield, The, covers a thousand square miles and extends into the counties of Glamorgan, Brecon, Monmouth, Carmarthen and Pembroke, **3**, 93
Picture: A Welsh Mining Village, **3**, 94

Southwark [illegible] of Inner London on the south side of the River Thames. It is famous for its cathedral and for Guy's Hospital.
Southwark Bridge was opened in 1921.

Southwell, a small city of Nottinghamshire noted for its cathedral, which dates from the twelfth century

South-West Africa is a mandated territory of the Union of South Africa. Stockraising is the main industry Diamonds are mined. Windhoek is the capital, **4**, 384

Southwold is a small market town and holiday centre on the coast of Suffolk, **3**, 60

Soviet means a council Russia is now known as the U.S.S.R., the Union of Soviet Socialist Republics. It was the revolutionary Soviets which seized power there after the downfall of the Tsar, **2**, 239, **4**, 105 *et seq.*

Soviet Central Asia, or Turkestan, comprises the Kazakh, Uzbek, Turkmen, Tadzhik, and Kirghiz Soviet Socialist republics of the Soviet Union, which occupy the dry desert country south of Siberian steppes. Among the great cities of these republics are Bokhara, Khiva, Samarkand, and Tashken, **4**, 112

Sovkhoz. See *State Farm*

Sow is the term used for a female pig, guinea-pig or badger, **6**, 381

Sowerby Bridge is an industrial town of the West Riding of Yorkshire. It stands on the River Calder.

Sow Thistle. A wild plant to be found in fields and waste places. It is not a thistle but has a thick juicy stem and large yellow flower heads, shaped something like a daisy. See *Thistle. Special Colour Supplement.* British Wild Flowers, **1**, *between* 304 and 305 (Plate 3)

Soya Bean is a plant grown in many countries, particularly in Asia. It bears blue flowers from which form pods each containing from three to five beans. Largely used for cattle and also as human food.

Space-Stations. Rocket power may make possible the establishment of stations in space, which would be useful in connection with the transmission of television, or as re-fuelling points for rockets, and aids to weather forecasting, as well as for scientific observations, **5**, 246
Picture: **5**, 246

Spade Guineas were coins worth 21s struck in the reign of George III On the back was a shield from which the term "spade" was derived.

Spain is a large country in the Iberian peninsula of western Europe Its interests are chiefly agricultural and its climate such that many fruits can be grown, including oranges and grapes. Famous for its wines, it has also fisheries and mineral wealth, particularly iron ore. Madrid is the capital. Since 1939 the country has been governed by a dictatorship under General Franco (*q.v.*). Population, including Balearics and Canaries, about 27,500,000, **4**, 134, 365
—conquered by Hamilcar, **2**, 64
Pictures. The Escorial, **4**, 130
The Cathedral of Old Seville, **4**, 132
On the Island of Majorca, **4**, 133
Columbus Peers Out to Sea, **4**, 134
An Easter Procession, **4**, 135
Built by the Romans, **4**, 136
Photo-tone Supplement. The Continent of Europe, **4**, *between* 112 and 113

Spalding is a small port and town of Lincolnshire, a centre of small holdings where bulbs and vegetable produce are grown

Spallanzani, Lazaro (1729-99) An Italian investigator, he laid the foundation of modern theories of volcanic action and meteorology.

Spaniel. Well-known breed of dog. There are land, water and toy varieties, as well as the cocker spaniel used for driving game, **8**, 315

Spanish-American War (1898). This war, which was won by America, resulted in an independent Cuba, Puerto Rico, Guam, and the Philippines were handed over by Spain to the U.S.A., **2**, 412

Spanish Armada. See *Armada.*

Spanish Chestnut. See *Sweet Chestnut.*

Spanish Civil War (1936–39). The war was fought between the Spanish Republicans and the Spanish Nationalists and resulted in the victory of the latter. Russia assisted the Republicans, and Italy and Germany the Nationalists, **2**, 245

Spanish Main. This was the name used for the Spanish colonies on the mainland of America, **4**, 297

Spanish Succession, War of (1702–13) was caused by King Louis XIV of France accepting the throne of Spain on behalf of his grandson Philip. It was fought by England, Holland, Portugal, Savoy, and the German Princes against France and is notable for the victories of Marlborough, the English general, **2**, 175, 408

Sparrow. The House Sparrow is the common British species and is similar to the smaller and slimmer Tree Sparrow which has a coppery and not a grey crown. The Tree Sparrow has also two distinct wing bars and a black patch on the cheeks. Both these birds belong to the Finch family and are not related to the Hedge Sparrow (*q.v.*) **1**, 177
Colour Plate. Tree Sparrow, **1**, *facing* 304

Sparrow-Hawk. A bird of prey with blue beak and tail barred black and grey. It is found in wooded districts and preys on small birds and animals.
Picture of nest, **1**, 175

Sparta. One of the city states of ancient Greece. The state was ruled by two Kings and all citizens were trained for war from boyhood The Spartans became famous for their indifference to pain or death and their contempt for luxury, **2**, 13, **9**, 20

Spartan. Name given to a citizen of Sparta in ancient Greece, all the male inhabitants of the State being soldiers, **2**, 13
a monument to the Spartans, **2**, 30
Pictures A Young Spartan Hunting, **2**, 13
How Spartan Youth was Trained, **2**, 15
A Spartan receives his Shield, **2**, 16
Spartans Wrestling, **2**, 27
The Persians Attack, **2**, 33

Spawn. Name given to the eggs of fish and frogs.
Pictures Frog Spawn, **1**, 155
Fish Spawn, **1**, 221

Speaker. An elected officer who presides over the sittings of the House of Commons, **9**, 58, 318

Spean. A river of Inverness-shire with a romantic glen or valley.
Picture **3**, 127

Spearmint is the variety of mint usually grown in our gardens for the making of mint-sauce and flavouring

Species means a kind, a sort, a variety or a group of animals or plants, the members of which are alike in many ways
In biology a species is usually a subdivision of a genus The cat belongs to the same species as the tiger and lion

Spectacles were probably invented long centuries ago by the Chinese, and Nero is reputed to have worn an eyeglass of beryl.
how they assist the sight, **9**, 332

Spectroscope. An instrument for examining the light given out by a flame or glowing body It consists of a telescope, a glass prism and a tube, mounted on a stand.
The light passing through the tube is broken up by the prism into a series of bands of different colours called a spectrum, which can be examined through the telescope.
Colour Plate. What a Glass Prism Does to White Light, **7**, *facing* 368

Speech House is the name of a building in the Forest of Dean, Gloucestershire. Here the foresters or verderers held courts.

Speed means the rate of motion. A man can travel at 21 miles per hour for 100 yards, but only at 14 miles per hour for a mile. Until the invention of the locomotive, man's fastest rate of travel was the speed of

the horse which carried him. Records of the different speeds of an express train; motor car; aeroplane; shell from a cannon; the earth's journey round the sun; light and wireless messages are shown in the picture mentioned.
Picture: **8**, 117

Speedwell is a familiar wild flower bearing bright blue blossoms. Sometimes known as bird's-eye, **1**, 306
Special Colour Supplement: British Wild Flowers, **1**, *between* 304 and 305 (Plate 4)

Spelling. Short cuts to good spelling, difficult words, common confusions and a list of words commonly misspelt, **8**, 191 *et seq.*

Spelter is the name given to zinc in ingot or commercial form.

Spencer Gulf is a wide opening from the sea at the south of South Australia.

Spencer, Herbert (1820-1903). Philosopher and author, born at Derby. He wrote on Education, Psychology and Biology in his works, the several volumes of which cover a wide field from *First Principles* to *Sociology* and *Ethics.*

Spencer, Stanley (born 1891). A modern British artist who has works in the galleries of almost all our large cities, **7**, 117
Photo-tone Supplement: Cottages at Burghclere; A Cotswold Farm, **7**, *between* 112 and 113

Spennymoor. A steel, iron and colliery town of County Durham.

Spenser, Edmund (1552-99). A poet of Elizabethan days, his first published work was *The Shepheard's Calendar* and his greatest work *The Faerie Queene* came later. It consists of six books, divided into twelve cantos and is a wonderful poetic romance, rich in descriptive beauty, and a great addition to the English language and did much to create the harmonies of English verse. He was buried in Westminster Abbey, **2**, 154; **7**, 129
Picture: Spenser and Sir Walter Raleigh, **7**, 129

Sperm is the seed of life of the male plant or animal; the spawn of fish or frogs.

Spermaceti is a waxy substance which collects on the surface of oil taken from the head of the sperm whale, **9**, 364

Sperm Whale. This sea animal, which may be as much as 70 ft. in length, is black above and grey on the underside. It frequents all the oceans. See *Whale.*

Spey. A famous salmon river of Scotland. It is over 100 miles in length and flows into the Moray Firth, **3**, 124

Spezia. Seaport and resort of Italy, 56 miles from Genoa. It is an important naval harbour.

Sphagnum is the name given to certain kinds of mosses. These mosses and other marsh vegetation have, in decay, produced the peat for which the Irish bogs are noted.
Picture: **3**, 143

Sphinx. A fabled creature, representing the Egyptian god, Harmachis, shown as a lion with a man's face. The oldest example is the Great Sphinx at Gizeh, not far from the famous Pyramids. It is 189 ft. long, and is hewn out of a rocky knoll. It is thought to date from about 2900 B.C. **4**, 195. (*p.h.*)
Picture: **4**, 198

Spice Islands. See *Moluccas.*

Spider. Is not an insect but belongs to the class Arachnida. This class is one of the series known as Anthropods (jointed-footed animals). It has eight legs, no wings, and a body in two parts only. The legs are hairy and the feet have claws From the spinnerets on the under surface the spider exudes the silk to spin into an elaborate web, **1**, 240; **9**, 368
Pictures: How the Spider Builds Her Web, **1**, 241
Hunting Spider and Brood, **1**, 243
Spider's Frozen Home, **1**, 244
Putting on the Brake, **1**, 245
The Lurking Spider, **1**, 246
Spider That Eats Birds, **1**, 247

Spider, Bird-Eating. A species found in Brazil, **2**, 340

Spider Crab. A variety of crab known to be a fierce fighter.
Picture: **1**, 238

Spider Monkey. An animal of the New World. It uses its tail as another limb. Also known as the Coaiti, **2**, 339
Pictures. Spider Monkey, **1**, 101
Making Pets of the Monkeys, **2**, 339

Spider, Mygale. See *Mygale Spider.*

Spiegeleisen is an alloy of iron with carbon and manganese, used in the manufacture of steel. The carbon in it combines with iron, being helped to do so by the manganese.
If very rich in manganese, the alloy is called ferro-manganese.

Spindle Tree. A large shrub or small tree which bears curious pink fruits, **1**, 305 (*p.h.*)
—fruits or berries are poisonous, **1**, 344
Picture: **1**, 346

Spinet. An obsolete keyboard instrument similar to, but smaller than, the harpsichord (*q.v.*).

Spinnerets. Wart-like knobs found on the body of a spider from which the material for web-making emerges, **1**, 242

Spinning is a form of angling used for trout and pike amongst other fish. Under this method an imitation small fish is used as bait, **8**, 255
Picture. Some of the Baits Used When Spinning, **8**, 253

Spinoza, Baruch (or Benedict) (1632-77). Famous Dutch philosopher, **7**, 364
Picture: **7**, 363

Spiny Pig. The literal meaning of the name porcupine, **1**, 116

Spiræa. Popular perennial garden plant which prefers a moist situation. Often known as Meadow Sweet.

Spitalfields is the name of a noted London market which specialises in vegetables, **3**, 62

Spitfire. Name of the famous Vickers-Armstrong British fighting aeroplane, **2**, 250; **5**, 210, 219

Spithead. A naval anchorage between Cowes (Isle of Wight) and Portsmouth, **3**, 37

Spitsbergen. A name given the group of Norwegian islands in the Arctic known now as Svalbard (*q.v.*).

Splints for use in first aid may be made from walking sticks, umbrellas, rolled newspapers or anything similar that is at hand, **8**, 241

Spokeshave. A kind of plane used in shaping wooden wheel-spokes, ladder rungs, etc. It is held across the work and pulled towards the user by handles projecting from its ends.

Sponges actually belong to the animal kingdom. They are found in many forms and some are obtained by diving. Sponge-fishing is an important industry in the Bahamas, British West Indies, **3**, 398
—what is a sponge? **9**, 367
Pictures. The Sponge Fleet in Harbour, **3**, 399
Bleaching and Curing, **3**, 400

Spoonbill. A rare wild bird about 30 in. in length so named from the shape of its bill. A wading bird, it is found in damp, marshy places.

Spoor. The trail or track made by an animal or bird.
The word comes from South Africa.
—of Animals. Footprints of badger, rabbit, water vole, hedgehog, field mouse and hare. See *picture pages,* **1**, 124 125

Spores. They take the place of seeds in lichens, ferns and other flowerless plants, **1**, 356

Sporran. Purse or pouch worn with a kilt, **9**, 319

Sport. Term used among plants. If in a collection of plants of the same kind one looks different from all the rest it is called a sport, **1**, 377

Sports and Games have been a feature of British life since Anglo-Saxon times, but it was in the Victorian era that many of our modern sports were properly organised and associations formed to make rules and generally govern the playing of the various games, **2**, 221; **9**, 401
—swimming and athletic associations formed, **2**, 222
Pictures: Measurements of Our Playing-Fields, **9**, 405
Making a Cricket Bat and Ball, **9**, 228, 229
Making Golf Balls, **9**, 230
Balls for the Tennis Court, **9**, 231
For the Soccer Season, **9**, 233
Two of our National Games, **10**, 97
See also *Cricket, Football,* etc.

Spotted Dog-Fish. A fish common round our coasts. It fastens its egg-cases to fronds of seaweed, **1**, 229

Spotted Fly-Catcher. A summer visitor which comes to this country during May. It takes its name from the fact that it lives mainly on flies.
Picture. **1**, 185

Spotted Hemlock is a plant of the wayside. Its leaves are poisonous, **8**, 244

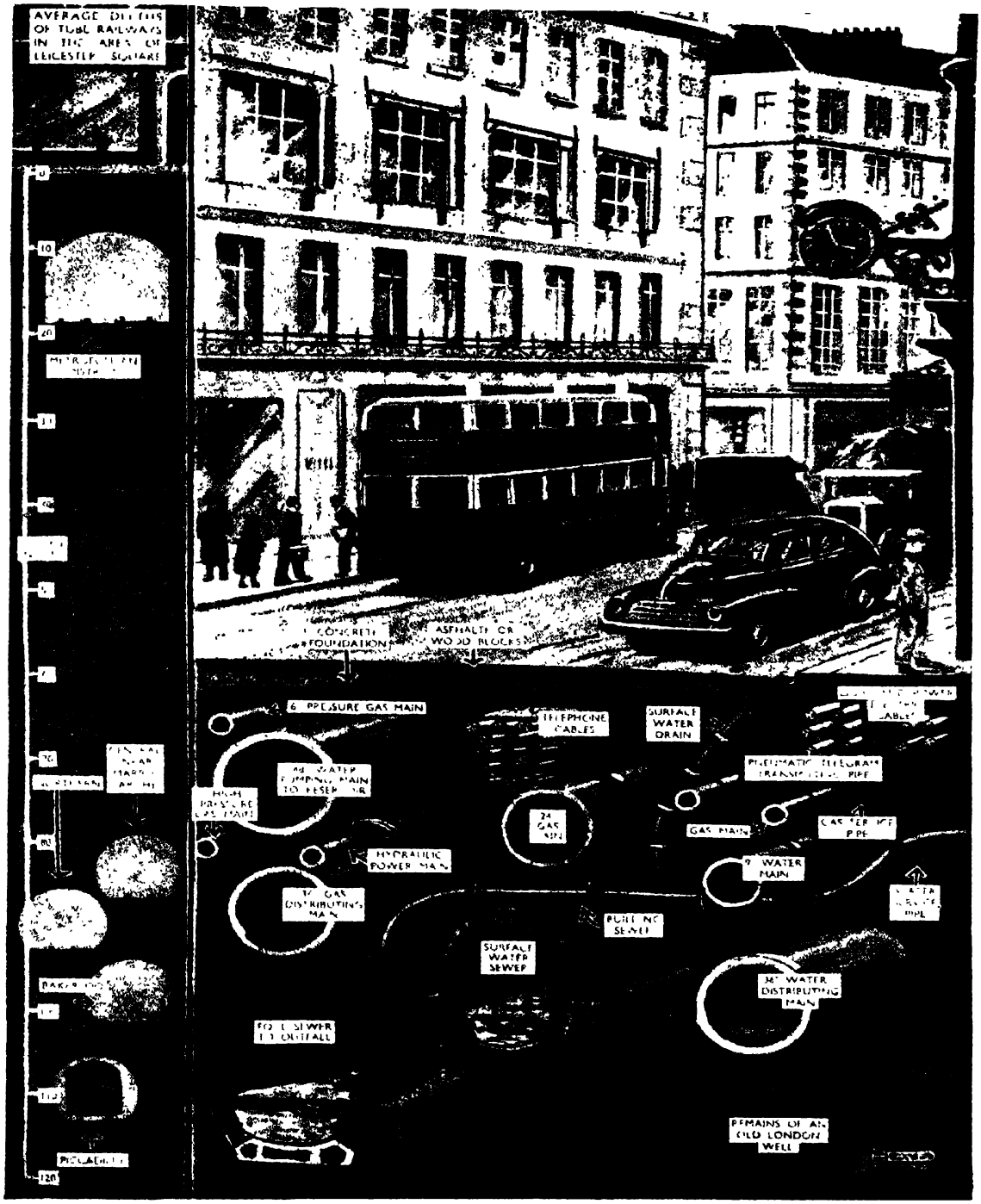
Spotted Hyæna. One of the three varieties of hyæna, **1**, 84

Spotted Newt. See *Smooth Newt.*

Spotted Persicaria. A wild plant which grows mostly in damp positions. It has stems that are notably red and small pinkish flowers that form in spikes.

S.P.Q.R. means *Senatus Populusque Romanus, i.e.,* the Senate and People of Rome.

BURIED BENEATH LONDON'S STREETS



Specially drawn for this work

Among the *Services We Maintain for the Common Good* (see p. 340) are water, gas and electricity supplies, drainage, telephones and underground railways, all requiring tubes, piping or cables, usually buried beneath the streets. In this picture the artist gives us an excellent idea of the network of pipes and cables beneath a typical London *street* (see p. 360). The tube railways and their varying depths are shown on the left.

Sprags is the name given in coalmines to short wooden props used for supporting the coal face.

Sprat. A fish belonging to the herring family, though very much smaller in size. It is found in large numbers off our coasts and is valuable for food, **8**, 78

Spree is a river of Prussia, more than 200 miles in length. It flows through Berlin, the traditional German capital, **4**, 85

Springfield, a city of the U.S.A., is capital of the State of Illinois.

Spring Morning, First—A Child's Poem. By Robert Bridges, **9**, 104

Springs. An important gold-mining centre of Witwatersrand in the Transvaal. There are actually ten gold mines within the area of the township. It is also a centre for the rich agricultural region of eastern Transvaal, **3**, 289

Springtail is the name of a wingless insect which has the power of jumping into the air by means of a curious spring-like organ.

Spring Tides is the name given to high tides, **5**, 27

Spruce. Trees of the pine family, or the timber produced from such trees. They are much grown in the conifer forests of Canada, **1**, 415; **3**, 167

Spruce, Himalayan. See *Himalayan Spruce.*

Spruce, Sitka. Name of a tree introduced into this country, where it is found to flourish, **1**, 326

Spurge is the name of a large family of plants, some of which bear yellow flowers, **1**, 304

Spurge, Sun. See *Sun Spurge.*

Spurius Lartius, a companion of Horatius at the keeping of the bridge at Rome, **2**, 52

Squarcione, Francesco. He started a school of painters at Padua, in Italy, **7**, 22

Squaw is the term for a wife among Red Indians.

Squid is the name given to a variety of cuttle fish found in British waters.

Squire. Originally this word was the title given to those next in rank to a knight. With the ending of the Feudal System, the title remained and came to mean a country gentleman and landowner. Many villages thus had their squires, the squire of each owning most of the land roundabout and having the villagers and yeoman farmers as his tenants, **2**, 122

Squirrel, Grey. Native of America, brought first to the London Zoo. It is now spreading to all parts of this country, **1**, 132. (*p.h.*)
Picture: **1**, 131

Squirrel, Red. Our native British squirrel, now becoming scarce, **1**, 132
—as a tree planter, **1**, 371
Picture: **1**, 132
Colour Plate: Britain's Native Red Squirrel, **1**, *facing* 44

Squirrel, Sugar. See *Sugar Squirrel.*

Srinagar is the capital of Kashmir, in north-west India. It is a centre for carpets and shawls.

S.S. means steamship.

Staccato. Detached; sounded sharply; crisp. Dots over notes in a musical score mean that the notes are to be played staccato; that is, sounded for a very short time, so that there are distinct intervals between them.

Stadt-Kirche is a Roman Catholic church at Donaueschingen, a small German town in the Black Forest where the great River Danube has its source, **4**, 87

Staffa is one of the islands of the Inner Hebrides. It is famous for Fingal's Cave, **3**, 139
Picture: **3**, 138 and 146

Stafford is the county town of Staffordshire. It is a centre for the making of boots and shoes and was the birthplace of Izaak Walton, **3**, 71

Staffordshire is one of the Midland Counties of England. Most of the Black Country, the big industrial area of Britain, is in the south part of the county. It has valuable coalfields and contains the district known as the Potteries around Stoke-on-Trent. It is drained by the Trent and its tributaries, **1**, 103; **3**, 71 *et seq*
See also *The Potter's Ancient Craft*, **9**, 195 *et seq.*
Pictures: Stoke-on-Trent from the Air, **3**, 73
Pottery Kilns at Hanley, **3**, 74
In the Heart of the Potteries, **9**, 195

Stag. The male deer. See *Deer*

Stag Beetle. The largest of British beetles. It is a creature with horns.

Stage-Coach. This was a public horse-drawn vehicle plying by stages between different towns. It was a four-wheeled covered carriage, seats inside and on top, with a receptacle for luggage called the boot. The first stage-coach to carry mails began in 1784.
From 1820 to 1840 stage-coaches were at their best, and the coming of the railway gradually drove them from the roads.
Picture: A Mail Coach of 1832, **6**, 285
Photo-tone Supplement: The Boy Through the Ages (Homeward Bound for Christmas), **8**, *between* 368 and 369

Stagnant means standing still, as water in a pool or pond.

Staines is a Thames-side town and residential centre of Middlesex. There has been a bridge here since the thirteenth century. Close at hand is Runnymede.

Stainforth, Flight-Lieut. George. An aviator who set up for Britain a world's aeroplane speed record of 407 miles an hour, **5**, 207

Stalactite. An icicle-like mass of limy matter, hanging from the roof of a cavern. It is formed by the oozing through the cavern roof of water containing carbonate of lime in solution.
A similar formation rising from the floor of a cavern, like a stalactite turned upside down, is called a Stalagmite.

Stalin, Marshal Joseph Vissarionovich Djugashvili (1879-1953) was Chairman of the Council of Ministers of the U.S.S.R., Secretary of the Communist Party of the U.S.S.R., and a member of the Politbureau. His adopted name of Stalin means "Man of Steel" and he lived up to it as Russia's leader in war and peace. He was succeeded by Georgi Malenkov, March, 1953, **2**, 253, 256, 412

Stalingrad is an important industrial town on the Lower Volga. It was formerly known as Tsaritsin and was called "the Red Verdun" because it was so stubbornly defended during the Russian Revolution. It was heroically defended a second time during the last war, **2**, 252; **4**, 118
Picture. **4**, 113

Stamboul is the name given to a part of the city of Constantinople, now known as Istanbul, **4**, 160

Stamens. Slender threads, each with a little head called an anther which arise in the centre of many flowers, **1**, 296
Picture. **1**, 298

Stamford. A country town of Lincolnshire, standing on the River Welland and the Great North Road.

Stamford Bridge, on the main road from York to Bridlington, is the site of the battle at which King Harold II defeated the Norwegian king Harold Hardrada (1066), **2**, 93

Staminal Column. Name given by botanists to part of a flower.
Picture: **1**, 294

Stamp Collecting. A hobby which began almost as soon as postage stamps came into use. It is known as philately, **4**, 397 *et seq*
—the Penny Post, **2**, 213, 214
—the collector's outfit, **4**, 397
—what to collect, **4**, 405
—how to collect, **4**, 408
Pictures: From the King's Collection, **2**, 241
The 2d. Mauritius, **2**, 241
The Watermark Detector, **4**, 397
Curious Stamps, **4**, 398
Native Rulers and Peoples, **4**, 399
Some of the Earliest Stamps, **4**, 400
Zoological Stamps, **4**, 401
How Stamps are Mounted, **4**, 402
The Royal Family, **4**, 403
Some Australian Stamps, **4**, 404
The Stamp Gauge, **4**, 405
Early British Empire Stamps, **4**, 406
Historical and Commemorative Stamps, **4**, 407
Always Use Tweezers, **4**, 408
Geographical Stamps, **4**, 410
Stamps of New Zealand, **4**, 411
More Interesting Pictorials, **4**, 412
Air Mail Stamps, **4**, 413
Countries or States which no longer issue Stamps, **4**, 414
Stamps of the Second World War, **4**, 415
Some British Empire Issues, **4**, 416

Stamp Duties are Inland Revenue taxes collected by means of stamps affixed or impressed on documents, etc., such as transfers of land or shares, mortgages, bills of exchange, etc. In most cases the value of the stamp is determined by the amount of money mentioned in the document.
—Stamp duties were among the grievances of the American colonists which brought about the War of Independence (1775-83), **2**, 191

Stamp Gauge. A piece of stiff card with rows of dots corresponding to the perforation in postage stamps, **4**, 402
Picture: **4**, 405

Stamp Mounts are used for fixing

postage stamps in an album. They are sometimes called *hinges*, **4**, 402
Picture: **4**, 402

Standard, The Battle of the. Fought near Northallerton between the English and Scots, 1138.
Picture: **2**, 97

Standpipe. A pipe rising vertically from the ground, through which water can be drawn from a main Watercarts are filled from standpipes called hydrants, rising through pavements. In many gardens standpipes with taps at the top are used for watering purposes.

Stanfield, William Clarkson (1794–1867). An Irish artist, he specialised in painting marine subjects
Picture: The Battle of Trafalgar, **2**, 197

Stanley is the capital of the Falkland Islands, interested in the whaling industry

Stanley, Sir Henry Morton (John Rowlands) (1840–1904) Ran away to sea from Denbigh, fought in the American Civil War, travelled over Asia Minor and became famous as a journalist Was commissioned to find Livingstone He discovered the Albert Edward Nyanza, **2**, 336
Picture **2**, 336

Stanleyville is a town of the Belgian Congo, on the River Congo, **9**, 314

Stanlow. A place in Cheshire, on the Manchester Ship Canal, where there is a large oil-refining plant
Picture **6**, 305

Starboard is the right hand side of a ship when one looks towards the bows In days when ships had no fixed rudders, they were guided with a large paddle, called a steer or steor in Anglo-Saxon, hanging over the right-hand board, or side, of the stern, so that it could be worked by the helmsman's right hand
The left-hand used to be named larboard, but, to avoid confusion of sounds in giving orders, it is now called port

Star Catalogues give a record of the position of stars. The oldest now known was made by Ptolemy about A D. 137. A photographic catalogue is being prepared by eighteen observatories, some 4,000,000 stars being thus recorded, **8**, 174
Picture The Wonders of the Heavens, **10**, 19

Star Clock. A timepiece the movements of which are regulated by observations of the stars.
Picture. **8**, 114

Starcross is a seaside town of Devon, at the mouth of the River Exe.

Starfish. Popular name for the Asteroida, creatures of the sea-shore, in which the body is extended into rays or arms. The mouth is in the centre of the body, and it has small tube-like feet which are usually equipped with suckers. There are many different kinds in all parts of the world, **1**, 232 *et seq.*
Pictures : **1**, 233

Star-Gazer. Name of a variety of goldfish, **1**, 225

Starling. A well-known bird in town and country. It is about 8 in. long and has black plumage with green and purple reflections. The female has the plumage speckled below as well as above. Its habit of living in a " bird city " is well known, **1**, 166
Special Colour Supplement : British Wild Birds, **1**, *between* 160 and 161 (Plate 2)
Colour Plate : British Birds' Eggs : **6**, *facing* 396

Star Magnitudes. The stars are classed by astronomers not according to actual size, but to their brilliance as we see them, **8**, 171

Starr-Grass. A form of coarse vegetation which binds drifting sand with its roots, **1**, 37, 39

Stars. The word " star " is used generally to denote any of the luminous bodies (except the moon) seen in the sky at night. Strictly speaking, however, it should not be used to describe the planets, but only the so-called " fixed " stars, which are outside the solar system These stars are situated at enormous distances from the earth, and are numbered in millions Whilst the sun is 92,900,000 miles from the earth, the nearest star is 25,500,000,000,000 miles away — both incomprehensible distances to mankind. The stars owe no allegiance to our sun, for each of them is thought to be a sun, although so far it has not been established that the stars are centres of planetary systems To the naked eye there is a distinction between a planet and a star. A planet gives a steady light, while a star twinkles, **8**, 169 *et seq*
Pictures: A Star Clock, **8**, 114
For Photographing Stars, **8**, 115
The Story of a Star, **8**, 119
Part of the Milky Way, **8**, 169
Millions of Stars Revealed, **8**, 172
A Star that Split, **8**, 175
A Star Cluster, **8**, 177
The " Bridal Veil " Nebula, **8**, 176
The Wonders of the Heavens, **10**, 19

Stars and Stripes is the name given to the National Flag of the U S.A. The flag contains forty-eight stars, one for every State. The seven blue and six white stripes represent the thirteen States which broke away from English rule.
Colour Plate : Some National Flags, **4**, *facing* 293

State Farm, or *Sovkhoz*, is a feature of agriculture in the Soviet Union State Farms are very large indeed and are used for specialist purposes and experimental farming, **4**, 118

Staten Island, at the mouth of Hudson River, is part of the City of New York

States Assemblies conduct the government of the Channel Islands, **3**, 53

Station is the word used in Australia to describe a big estate where vast numbers of sheep or cattle are kept, **3**, 214

Stator is the name given to the stationary part of an electric motor
Picture **6**, 159

Statue. A sculptured cast, or moulded figure of a person or animal, usually life-size or larger. On a much smaller scale it is called a statuette See *Sculpture.*

Statue of Liberty, given to the people of the U.S A by France stands on Bedloe's Island in New York Harbour, **4**, 269
Picture: **4**, 273

Statute. A law made by Act of Parliament. English law is composed of statute law, which is all statutes taken together, and common law. The second is based on custom.
Some of our common law can be traced back to Saxon times.

Statute Law. See *Law*

Statute of Labourers (1351), a law by which peasants were forbidden to seek fresh work, **2**, 126

Stavanger is a port of Norway standing on the fjord of the same name. It is an important centre of the fishing industry, **4**, 356

Stave Lake is in British Columbia. On its shore a fine hydro-electric station has been built.
Picture **5**, 69

Steam is water in a gaseous state. It is an invisible colourless gas. The white cloud which is seen issuing when the steam makes contact with the air is due to the small particles of water which form and in this state it is known as " wet steam "
In addition to its use in different types of engines, steam is used for heating, cleansing, disinfecting and other purposes. See *The Early Days of Steam*, **5**, 115 *et seq*
Hero of Alexandria is believed to be the first man to realise its power, **7**, 348
—Questions and Answers about Steam, **9**, 402
Pictures Manchester and Liverpool Railway, **5**, 115
A Model of Newcomen's Engine, **5**, 116
Pumping by High Pressure, **5**, 117
Learned from a Kettle Lid, **5**, 118
By Beam and Wheel in 1788, **5**, 119
Our Earliest Road Engine, **5**, 121
First Use of Steam Power, **7**, 347
How a Locomotive Works, **10**, 221

Steamboat. Steam-power was first used as a substitute for wind power in propelling boats and ships about the year 1776, but was not a success. Other attempts followed and in 1807 the *Clermont*, the first steamboat to carry passengers, was put into service on the East River, New York Before then, however, the *Charlotte Dundas* had been used as a tug on the Forth-Clyde Canal in 1801 See *The Early Days of Steam*, **5**, 118 122 ; also *The Merchant Navy*, **8**, 30-32
Pictures Britain's First Passenger Steamship, **5**, 120
The First Practical Steamboat, **8**, 34
First British Steamer to Cross the Atlantic, **8**, 35
The First Cunard Liner, **8**, 36
See also *Ship.*

Steamboat, Model. How to build a model cargo steamer
With diagrams, **8**, 351

Steamboat Willie was the title of the second *Mickey Mouse* film produced by Walt Disney. It was a sound film, **9**, 283

Steamers, Big. A Poem by Rudyard Kipling, **9**, 86

Steam Hammers were first invented about 1842 by James Nasmyth. The hammer is raised by means of the pressure of steam in a piston and a

heavy steam hammer may be of 100 tons in weight.
Picture: 6, 53
Steam Rollers, for rolling the highways, first came into use in 1865, 5, 38
Steam Turbine. See *Turbine Engines.*
Steatite, or Soapstone, is the proper name for the substance we know as French Chalk. It is used in the manufacture of electrical switchboards, 4, 351, 352
Steel is pure iron heated above its melting point with the addition of small quantities of carbon, silicon, phosphorus or sulphur. Alloy elements such as manganese, chromium, nickel, etc., may be added, thus increasing its range of properties. An account of the manufacture of steel is told and illustrated in *The Story of Steel,* 6, 55 *et seq.*
See also *In the Age of Steel* (Modern Building), 7, 329 *et seq.*
British steel production, 3, 83 *et seq.*
—the steel industry of the U.S.A., 4, 270 *et seq.*
—the steel industry in Chile and Brazil, 4, 324
Pictures: Birmingham, Alabama, 4, 278
Where Steel is Made, 4, 279
Scenes in a Steel Works, 6, 55 *et seq.*
Colour Plates: A Blast Furnace in Action, 6, *facing* 37
An Ingot-charging Machine at Work, 6, *facing* 44
Steele, Richard (1672–1729). Was an Irishman educated in England. He wrote comedies, but is best known as the founder (with Addison) of *The Tatler* (1709) and for his contributions to another journal *The Spectator,* 2, 179; 9, 206
Steel, In the Age of. Steel is used today, combined with reinforced concrete, in the construction of large buildings, 7, 329 *et seq.*
Pictures: Pillars of Concrete, 7, 329
Building a London Hotel, 7, 330
The Chains for St. Paul's, 7, 331
Hoisting Steel into Position, 7, 333
Headquarters of United Nations, 7, 334
A New Giant in Whitehall, 7, 335
A Modern Village in an Old City, 7, 336
In Australia's Largest City, 7, 337
Architecture in the Dominions, 7, 338
Steel, Open-Hearth. This steel is made by a process invented by Sir William Siemens. There is a "regenerative" system of heating, 6, 61
Colour Plate. Casting Steel into Ingots, 6, *facing* 45
Steel, Rolling. Rails, joists, bars and plates of steel are produced in a rolling mill where white-hot ingots of metal are squeezed through rollers, 6, 72
Pictures: At Work in the Rolling Mills, 6, 70
In the Mills at Margam, 6, 74, 75
Steel Ships were first built in 1873, or thereabouts, 5, 254
Steelyard. Name given to a band of merchants, largely German, who traded in London under the title Merchants of the Steelyard. George Gisze was one of these merchants.
Picture: 7, 37
Steeple Rock. A curious pillar of rock to be seen near the Lizard Point, Cornwall.
Picture: 3, 46
Steer, Wilson (1860–1943). Well-known British artist, he is famous for his portraits and landscapes, 7, 111, 112
Picture: 7, 118
Stefansson, Vilhjalmur (born 1879). A Canadian Arctic explorer, he discovered a tribe of fair-haired, blue-eyed Eskimo near Coronation Gulf. Author of *The Friendly Arctic.*
Stegosaurus, one of the family of dinosaurs, 1, 24
Picture: 1, 18
Colour Plate: Animals of Prehistoric Times, 1, *facing* 37
Steinbok. Name of one of the smaller antelope groups found in Africa. Only the males have horns.
Stellenbosch. A town of Cape Province, in the Union of South Africa. It is the centre of a fruit-growing district.
Stem Stitch, in embroidery, should always be used for definite lines. It is recommended for stems and veins and for outline work, 8, 416
Picture: 8, 415
Stencilling. The use of a stencil, which is a thin plate of metal, leather or other suitable material, with a pattern cut through it. The stencil is laid flat on a surface of silk, paper or any other material to be ornamented, and brushed over with colour, 9, 416
Picture: Stencilling as a Homecraft, 9, 415
Stenography. See *Shorthand.*
Stephen (1097–1154). King of England He seized the crown from Matilda, daughter of Henry I, 2, 97, 404
Stephen, Saint (tenth century). He was the first King of Hungary and established Christianity in his country. For this he was canonised, *e.g.,* his name was added to the roll of saints, 4, 90
Stephenson, George (1781–1848). Born near Newcastle, he became an engine worker at a colliery. Here he built his first locomotive which hauled 30 tons up an incline at four miles an hour. He became engineer of the Stockton & Darlington Railway in 1821 and of the Liverpool & Manchester Railway in 1826, 2, 214, 410; 5, 116, 122
—as a boy he made many models, 9, 226
Pictures: A Stephenson Engine of 1845, 5, 123
From George IV to George VI, 5, 125
Special Colour Supplement: Railway Engines, 5, *between* 128 and 129 (Plate 1)
Stephenson, Robert (1808–59), son of George Stephenson. Designed the fire tubes to which his engine the Rocket owed greater power and speed than its predecessors. Invented the system of tubular plates employed in the Menai Bridge, 3, 103; 5, 48
—he designed the Royal Border Bridge, 3, 109
Steppe is the name given to the great treeless plains of the Soviet Union, 4, 112
Stereotyping is a method of making casts from set-up type so that many printing-plates can be produced from one mould, 9, 213, 392
Picture: Making the Stereo, 9, 215
Sterling. Our silver pennies in Norman times bore a little star—a *sterling,* and they became generally known as "sterlings." A pound of sterlings was a pound weight of silver pennies, and pound sterling became the name of the English pound and the money in which accounts were settled. The *sterling area* comprises the countries of the world where the current money is closely linked to the English pound. The *dollar area* means those countries where the currency is linked with the American dollar.
As a general term the word sterling is used to imply "of solid worth" or genuine; not showy or false in any way.
Stern, G. B. A modern British writer, she has produced both books and plays that have earned high praise, including *The Woman in the Hall,* and *Trumpet Voluntary,* 7, 264
Sterne, Laurence (1713–68). The author of *Tristram Shandy,* was a Church of England clergyman who became Prebendary of York.
Stettin. See *Szczecin.*
Stevens, Captain A. W. An American airman, who with Capt. O. A. Anderson, set up a record in 1935, for balloon ascents, reaching a height of 14 miles, 5, 189
Stevenson, Robert Louis (1850–94). He began writing in 1876; and, despite ill-health, became a great figure in English literature. *Treasure Island* is generally regarded as his best work and other well-known stories are *Kidnapped, Catriona, The Master of Ballantrae* and *Dr. Jekyll and Mr Hyde.* The last six years of his life were spent in Samoa, 2, 411; 7, 224
Poem: The Gardener, 9, 87
Pictures: My Kingdom, 7, 226
Long John Silver, 7, 227
A Memorial to Robert Louis Stevenson, 7, 228
Stewart Island is found off the southern coast of the South Island of New Zealand. It is a part of the Dominion, 3, 274
Steyning is a small town of Sussex, about five miles from the coast.
Stick Insects is the name given to creatures having a close resemblance to the wood of the plants on which they live, 3, 368
Stickleback. A group of small fishes which take their name from the spines on the back. There are three kinds in Britain: the three-spined, ten-spined and fifteen-spined. The first two are freshwater fishes while the third belongs to the sea, 1, 207
Pictures. The Three-spined Stickleback, 1, 208
Nesting of the Stickleback, 1, 209
Colour Plate: Fish in Their Natural Element, 1, *facing* 204
Stigma. The tip of the pistil of a flower, which receives the pollen.
Stilboestrol is a drug used in certain forms of cancer. It was discovered by Professor Dodds in 1948, 7, 416
Still. An apparatus used for the extraction from a substance of its various parts by the application of

heat. **Stills** are used for the work of distilling.
Stilton is a small town of Huntingdonshire. It gave its name to Stilton cheese which was first made in this district.
Stilts. A pair of props with supporting steps to be held to the legs so that the wearer is higher from the ground and able to proceed with longer strides.
—the shepherds of the Landes district of France used stilts, **1**, 314
Stilwell, Joseph W. (1883-1946) United States General who was in command of American armies operating with British forces in Burma 1943-44. He later became commander of the U.S.A. 10th Army, **2**, 254
Stimulants have sometimes to be given in cases of first aid when the patient's heart is feeble. Good stimulants are: Strong tea or coffee, with sugar; brandy; strong beef tea; and sal volatile, **8**, 234
Stinging Nettle. A plant the roots of which run underground so that it spreads rapidly. The hairs of the leaves are hollow needles with poison glands, **1**, 305, 344
—how does the nettle sting? **1**, 344
Sting Ray. An armed fish which gives painful stabs with a spine at the end of its tail, **1**, 219
Stings of Insects. These are not usually dangerous but cause pain and irritation. In most cases the danger arises from infection through the puncture in the skin, and for that reason the application of some antiseptic lotion or cream is the safest course as this affords a certain amount of temporary relief and wards off any risk of harmful after-effects. Avoid scratching the skin in the area of the sting or bite
Stinkhorn. The British members of this fungus family are not offensive as are those growing in the tropics
Picture: **1**, 362
Stint. A bird belonging to the plover family. The best-known in Britain is the Little Stint which is a fairly regular autumn visitor, and occasionally in the spring. The American Stint and Temminck's Stint are very occasional visitors. The Little Stint is about the size of a sparrow, with mottled brown and black plumage.
Stipendiary Magistrate. See *Magistrate.*
Stipule. A leaf-like shoot growing at the bottom of a leaf-stalk, away from the leaves themselves.
Stipules are in pairs, one on each side of the stalk.
Stirling is the county town of Stirlingshire and stands on the River Forth. It manufactures tweeds, carpets and other goods and is noted for its castle and monument to Wallace, **3**, 115
—Bruce marched on the Castle, **2**, 115
Picture: **3**, 114
Stirlingshire is a county of Scotland through which flows the River Forth. It has both coal and iron and many industries. Ben Lomond is one of its mountains.
Stitching is the firmest method of joining together two pieces of material, **8**, 407
Picture: **8**, 408
Stitchwort. A wild plant used in olden days as a remedy for stitch, **1**, 300
Colour Plate: **1**, *between* 304 and 305 (Plate 1)
Stoat. An animal belonging to the same family as the weasel; reddish-brown in colour, yellowish underneath Called Ermine in winter, **1**, 127
Picture: **1**, 126
Colour Plate: Changed into its Ermine Coat, **1**, *facing* 45
Stock Exchange. A place where stocks and shares of public companies as well as Government securities are bought and sold. The London Stock Exchange was founded in 1773, and there are stock exchanges in Manchester, Liverpool, Birmingham, Glasgow, and other commercial centres in Britain. On the Continent the stock exchange is usually known as the Bourse, **9**, 354
Stock Ghyll Force is the name of a waterfall to be seen near Ambleside in the Lake District.
Picture: **3**, 89
Stockholm, the capital of Sweden, is one of the most delightful cities in Europe. It is a seaport and has fine buildings, many industries and wide commercial interests, **4**, 45
Pictures: The Royal Palace, Stockholm, **4**, 43
Stockholm's Town Hall, **4**, 43
Stockholm's West Bridge, **4**, 44
Stocking Stitch is a particular stitch used in knitting, **8**, 396
Picture: **8**, 398
Stockmen is the name given to shepherds or cowmen on an Australian sheep or cattle station, **3**, 214
Picture: **3**, 244
Stockport is a town of Cheshire noted for its hat-making. Not far away is Lyme Hall, a National Trust Property. Originally the land was given by the Black Prince to Sir Thomas Danyers, for services at Crecy, **3**, 410
Picture: **3**, 408
Stocks have been a form of punishment since Saxon times. The prisoner was held by the ankles, the stocks opening like a book. People who failed to attend church were punished by being placed in the stocks, **9**, 324
Picture: The Village Stocks, **3**, 47
Stocks, Ten-Week. Popular half-hardy annual plant. Single and double varieties, **8**, 278
Stockton and Darlington Railway, opened in 1825, was our first public steam railway, **5**, 122
Colour Plate: Stephenson's "Locomotion," the First Engine to Run on the Stockton and Darlington Railway, **5**, *facing* 128
Stockton-on-Tees is a great steel and iron-working town of County Durham, **3**, 82
Stoke-on-Trent, Staffordshire, is a large city in the heart of the Potteries, where china, porcelain and earthenware are manufactured, **3**, 73
Pictures: **3**, 73 and 74; **9**, 195
Stoke Poges is a Buckinghamshire village near Slough and Burnham Beeches. It was the scene of Gray's famous *Elegy* and he is buried in the churchyard.
Stolons are runners producing roots that develop from the parent plants as in the case of the strawberry.
Stolzenfels, Schloss, See *Schloss Stolzenfels.*
Stomach. This is the bag in our bodies into which food passes after we have swallowed. It is really an enlarged part of the digestive tube, **8**, 220
Picture: **8**, 222
Stomata. Name given to the innumerable mouths on leaves by means of which they absorb food for the plant's growth, **1**, 290
Stone Age, The, is that period in which prehistoric man fashioned his weapons and tools from stone, before he developed the capacity to make use of such metals as bronze and iron, **9**, 320
Picture Before Men Used Iron, **9**, 321
Stonebench is a point on the River Severn below Gloucester from which the famous bore may best be viewed, **5**, 28
Picture: **5**, 31
Stonechat. A small bird of the thrush family found on heaths and commons, feeding chiefly on insects.
Special Colour Supplement: British Wild Birds, **1**, *between* 160 and 161 (Plate 2)
Stonecrop, Yellow See *Yellow Stonecrop.*
Stone Curlew. A bird which has several names, including Great Plover, Norfolk Plover, Night Hawk and Thick-knee. It resembles the plovers in many ways and is normally a summer visitor to England. Long-legged, its chief characteristic is its large, bright yellow eye. It is sandy brown in colour
Stonefish is found in the waters of the Great Barrier Reef, Australia Its poisonous spines cause slow and painful death, **3**, 228, 230
Stonehaven, Kincardineshire, is an important centre of the Scottish herring fishery It is also a seaside resort, **3**, 113, 124
Stonehenge consists of a vast circle of massive stones that may have been a Temple of the Sun The word means the hanging stones, and this mysterious monument of the past is found on the edge of Salisbury Plain, **3**, 37; **7**, 280
Pictures: England's Stones of Mystery, **3**, 40
Stonehenge at Sunset, **7**, 279
Stonehenge in a Sketch Plan, **7**, 282
A Bird's Eye View of the Temple, **7**, 283
The Abbot's Nose, **7**, 289
Stonehouse, Devon Once a separate township but now part of the borough of Plymouth, **3**, 46
Stone of Destiny. Name given to our Coronation Stone See *Scone*
Stones, The Largest Hewn Building, in the world are at Baalbec in Syria, **9**, 408
—transport of huge stones by the ancients was done by harnessing men to them, **9**, 408
Stook. A group of corn sheaves, formed by leaning sheaves against one another, ear end upwards. Farmers stook corn to allow it to dry and finish ripening. The word is connected with "stack," **6**, 390
Picture: **6**, 397
Stork. A large bird related to the herons. It is common in many parts of Europe where it often nests on a

roof-top. The bird is sometimes seen in England.

Stork, Marabou. See *Marabou Stork.*

Stork's Bill. A plant found growing on dry commons. Its seeds are provided with a twisted tail which drives them into the ground.
Pictures: **1,** 376

Storm-Cock, or Storm Thrush. Name sometimes given to the Missel Thrush (*q.v.*).

Stormont Castle is on the outskirts of Belfast, Northern Ireland. Here are the Parliament Houses, **3,** 148
Picture: **3,** 148

Storm Petrel, or Stormy Petrel. See *Petrel.*

Stornoway, a port on the island of Lewis with a herring fishery, is the principal town of the Outer Hebrides, **3,** 140

Stor-Tory is the name of the chief market place in Oslo, capital of Norway, **4,** 45

Stothard, Thomas (1755-1834). Well-known British artist and illustrator
Picture: **7,** 140

Stour. A river of East Anglia, it enters the North Sea at Harwich, where its estuary combines with that of the Orwell, **3,** 59

Stourbridge. A town of Worcestershire, standing on the River Stour. It is a famous centre in the making of glassware

Stourbridge Fair is the name of a great annual event held at Cambridge, **3,** 68

Stour, Kentish. See *Kentish Stour.*

Stow, John (1525-1605). English historian best known for his *Survey of London,* a detailed and interesting account of the city in his time.

Stowe, Harriet Beecher (1811-96). The authoress of *Uncle Tom's Cabin,* which had a great influence on public opinion over the abolishing of slavery in the United States.

Stowmarket. A market town of Suffolk, interested chiefly in agricultural products, **3,** 62

Stow-on-the-Wold is a famous old town of the Cotswolds and was once noted for its sheep fairs. It has been described as "the hub of the Northern Cotswolds," **3,** 24

Strabane is a small town of County Tyrone, Northern Ireland. It stands on the River Foyle.

Stradivari, Antonio (1644-1737). Born at Cremona in Italy, he was apprenticed to the famous violin-maker Nicolas Amati, he became more famous than his master. Such of his violins as survive command fabulous prices. In accordance with custom he Latinised his name to Antonius Stradivarius, **9,** 341

Strafford (Thomas Wentworth), Earl of (1593-1641), was the adviser of King Charles I after the Duke of Buckingham had been killed (1628). He was in power for twelve years, being then impeached and ending his life on the scaffold in 1641, **2,** 160, 161

Strait. Narrow passage of water between two seas. The Strait of Dover is a narrow stretch of water joining the English Channel and the North Sea.
—most important straits of the world, **9,** 308

Strait of Belle Isle divides Newfoundland from Labrador.

Straits of Salamis. Scene of the sea battle between Greeks and Persians, 480 B.C., **2,** 31
Picture: **2,** 32

Strakes is the name given to the courses of steel plates of which a ship's sides are constructed, **5,** 282

Strand, The. Famous London thoroughfare running from Temple Bar westwards to Charing Cross. On the north side are the Law Courts, Australia House, and several theatres; on the south side King's College, Somerset House, Charing Cross railway station and the Adelphi, **9,** 357
Pictures: Busy Thoroughfares, **3,** 11
The Strand -Then and Now, **9,** 359

Stranraer is a port of Wigtownshire on Loch Ryan. It has a regular steamer service to and from Larne, in Northern Ireland.

Strasbourg is the capital and cathedral city of Alsace, restored to France after the war of 1914-18, **4,** 71

Stratford, Essex, is a manufacturing and industrial district on the eastern side of Greater London.

Stratford-on-Avon, Warwickshire, is about eight miles from Warwick. It was the birthplace of William Shakespeare, **3,** 70, **9,** 339
Picture: The Memorial Theatre, **3,** 71

Strathbogie Hills, in Australia, are said to be the hiding-place of the treasure amassed by the Kelly Gang, **3,** 206

Strathcona, Donald Alexander Smith, First Baron (1820-1914). A Scotsman who held many important positions in Canada. He was largely responsible for the founding of the Canadian Pacific Railway, **3,** 158

Strathcona. The small steamer, fitted as a travelling surgery, used by Dr Grenfell of Labrador, **2,** 380

Stratheden, a vessel, of nearly 24,000 tons, is a fine liner belonging to the Peninsular and Oriental Steam Navigation Co.
Picture **5,** 255

Strathmore means "a great valley" and refers to the gap between the Grampians and Sidlaw Hills in Scotland, **3,** 115

Strathmore, Earl of. Brother of our Queen Mother, Glamis Castle is one of his seats, **2,** 244

Strathpeffer is a holiday and health resort of the Scottish county of Ross and Cromarty.

Stratified Rocks. See *Rock Strata.*

Stratocruiser aeroplane is a type, with every device for the comfort of the passenger, used by the Pan American Airways.
Picture: (Interior), **5,** 235

Stratosphere. The atmosphere surrounding our earth has been divided into five regions by scientists. Of these the stratosphere, roughly from six to ten miles above the earth and probably extending upwards for another forty miles, consists principally of nitrogen. By the ascent of such scientists as Professor Piccard into this airless region a great deal of scientific knowledge has already been obtained, **5,** 4, 188 *et seq.*
Picture: Ten Miles High, **5,** 190

Stratus is the name given to a particular form of cloud, 5, 9

Strauss, Johann (1825-99), the German musician, composed some 400 waltzes and was known as the "Waltz King," **7,** 189
—his *Blue Danube* waltz, **4,** 87

Strauss, Richard (1864-1949). One of the most famous composers in recent times. His comedy-opera "Rosenkavalier" has delighted many audiences. He visited London frequently and even at 83 conducted in the Albert Hall, **7,** 194

Strawberries are produced on low-growing plants. There are many varieties of this delicious fruit, some of the Alpine sorts bearing all the summer

Strawberries, Wild. See *Wild Strawberries.*

Strawberry Tree. Name given to a form of Arbutus. It produces whitish flowers which are followed by berries, though the fruits take more than a year to ripen. The tree has no connection with the strawberry, though there is a slight similarity between the fruits

Straw, Jack. The name taken by the leader of the Essex peasantry during the revolt of Richard II's reign, **2,** 127
Picture **2,** 126

Stream-lined means so shaped as not to set up eddies when passing through water or air. Unless the under-water part of a ship's hull is properly stream-lined, the water will not come together quietly behind it, and a drag, causing waste of power, will be created
For the same reason, the hull of an airship, the exposed parts of an aeroplane, some motor-car bodies and certain railway locomotives are stream-lined. Fish have been perfectly stream-lined by Nature
Pictures: Stream-lined Engines and Trains, **5,** 125, 130, 131, 143
The Importance of Shape, **9,** 381

Streatham is a large residential suburb of south-west London. It is in the borough of Wandsworth and has an extensive common

Street. A word which comes from the Latin *via strata,* meaning a paved way. The name is given to the paved, house-lined thoroughfares in towns in contrast with the lane or country road
Picture: Buried Beneath London's Streets, **10,** 355

Street Which is Called Straight, The. A covered thoroughfare of which we read in the Holy Bible. It is situated in Damascus.
Picture. **4,** 174

Streptomycin is a drug which has given beneficial results in the treatment of tuberculosis, **7,** 416

Stretcher. A sort of hammock in a frame, on which an injured or sick person is carried, stretched out, or lying full length.

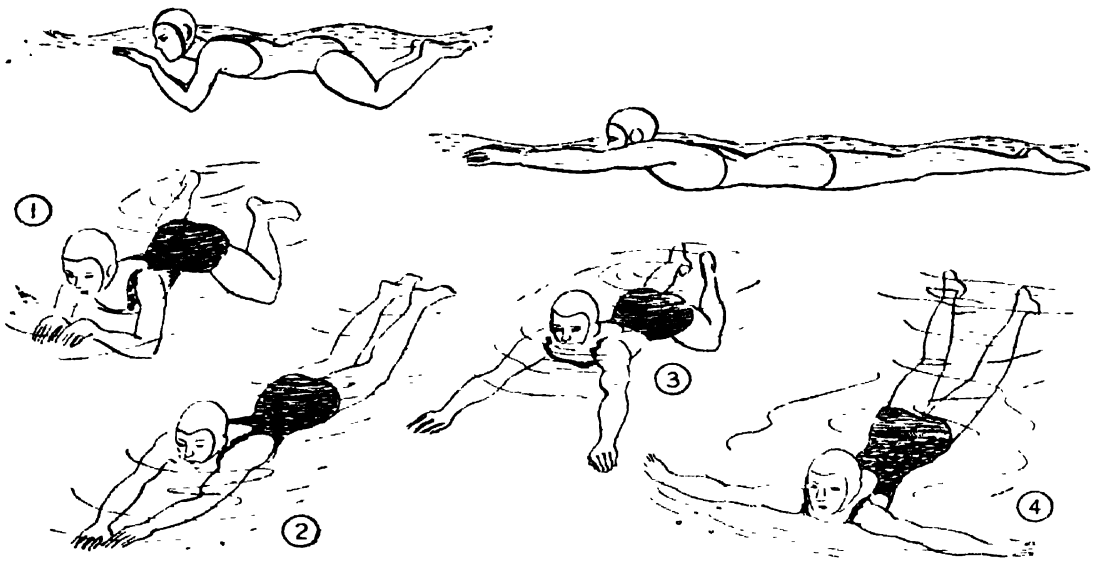
Striema. A tributary of the River Maritza which flows through the plain of Rumelia in Bulgaria, **4,** 97

Stringfellow, J. (1799-1883). An early pioneer of aviation. With the help of William Henson, he built a steam-driven model aeroplane about 1842, **5,** 185

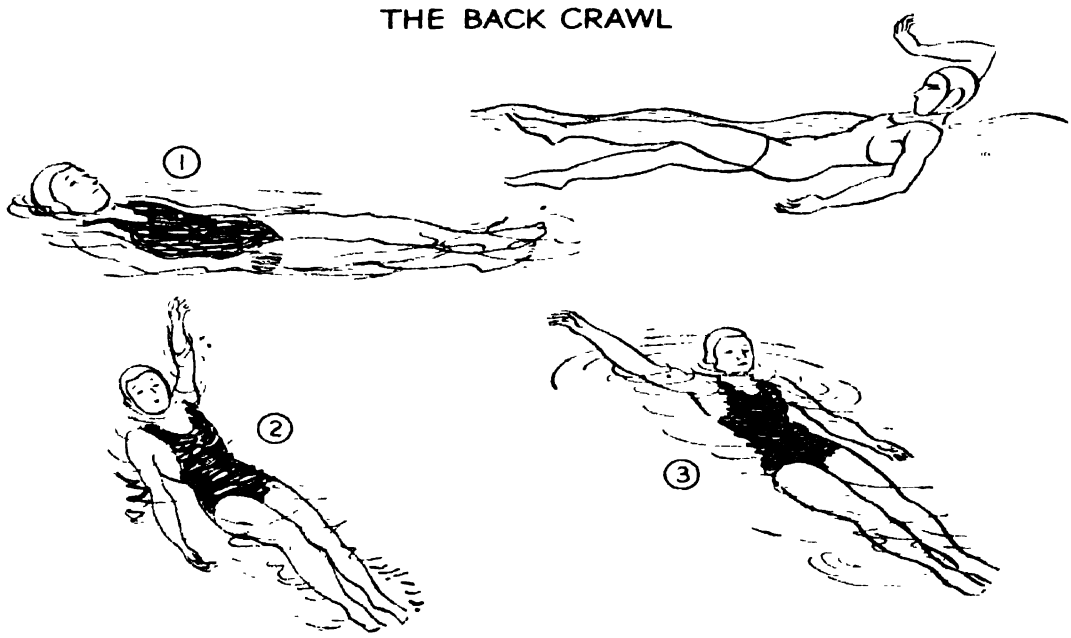
Picture: First Design of a Machine with Planes, **5**, 186
Strode was one of the " five members " of parliament whose arrest was attempted by King Charles I, **2**, 161
Stroke Stitch, in embroidery, should be worked in thick threads. It is good for geometrical designs, **8**, 416
Picture: **8**, 415
Stromboli is the name of an active volcano, 3,040 ft. high, situated on one of the Lipari Islands off the coast of Italy, and north of Sicily, **4**, 154; **9**, 314
Stromness is a port and town of the Orkney Islands, **3**, 140
Stroud. A manufacturing and industrial town of Gloucestershire famous for its cloth.
Struma is the name of a river of Southern Europe. It empties into the Ægean Sea, after flowing through Bulgaria.
Strutt, Lieut.-Colonel. Second in command of a Mount Everest Expedition, **2**, 389
Stuart, Arabella, Lady (1575–1615). After Queen Elizabeth, she was next in succession to James VI of Scotland, and so became the central figure in the plots of those who did not wish James to succeed Elizabeth as sovereign of England. She was therefore suspect and was kept under constant guard. She spent the later years of her life a prisoner in the Tower of London, **2**, 157
Stuart, Charles Edward. See *Prince Charles Edward.*
Stubble is the name given to the short ends of grass after hay has been cut and made, and to the bottom parts of the plants after wheat, oats and barley have been harvested, **6**, 390
Stuhlingen. A town of south-western Germany about twenty miles west of Baden-Baden. It stands on the Wutach, a tributary of the Rhine. An outbreak here in 1522 heralded the Peasants' War, **4**, 75
Stupa is another name for a Dagoba, a domed building containing holy relics found in such Eastern countries as Burma, **3**, 326
Picture. **4**, 218
Sturgeon. Name of a shoemaker of Woolwich. A little more than a hundred years ago he invented the electro-magnet, **6**, 149
Sturgeon, a fish not infrequently caught in British waters. It has bony armour and resembles the denizens of seas and lakes in prehistoric times, **1**, 16
Sturt, Charles (1795–1869). One of the earliest Australian explorers. He discovered the great Murray River, **3**, 204
Stuttgart is the chief town of the state of Wurttemberg, and stands on the River Neckar. It is an important manufacturing town, **4**, 79
Stye Head Pass is a route through the mountains of the Lake District, **3**, 88
Style. The part of a flower between the ovary and the stigma. It is a tube connecting the two, through which pollen finds its way to the ovules.
Stylus, a kind of pencil used in ancient times for making marks on a wooden tablet coated with wax, **2**, 19
Submarine. A vessel which has the power to submerge below the surface of the sea. Generally submarines are used as torpedo boats to attack enemy vessels in war-time. The modern type of submarine was invented towards the end of the nineteenth century and the first British submarines were built in 1901-02, **2**, 225; **8**, 12; **9**, 398
Pictures: The Flag of Success, **8**, 14
A Submarine Depot Ship, **8**, 18
Photo-tone Supplement: Guardians of the Seas, **8**, *between* 96 and 97
Submarine Cables. See *Cables, Submarine.*
Submarine, A Model. How to make an interesting elastic-driven vessel, **8**, 360. With *Diagrams.*
Subnodal means lying under a node or swelling in the stem of a plant, from which leaves spring.
Subnormal means below what is normal or usual. The normal temperature of the human body is about 98½° Fahrenheit. If a person's temperature falls to, say, 96½°, it is subnormal, and generally a sign of something being amiss with his health.
Subsidy. A sum of money granted for a certain purpose; a grant made by Parliament for a special object, to benefit the country.
Subterranean. Underground; below the surface of the ground. Earthquakes are caused by subterranean movements of the earth's crust.
The " tube " railways of London run in subterranean tunnels.
Succession, Act of (1701). It provided for a Protestant succession to the British throne through Princess Anne, younger sister of Queen Mary (wife of William III), **2**, 173
Succory. A familiar wild plant that produces bright blue flowers. It is allied to chicory.
Sucker Fish, or Sucking Fish. Found in Australian waters, this fish moves around by attaching itself to other sea creatures, **3**, 248; **1**, 210
Sudan. A vast district of North Africa. It consists of the Western Sudan; the Central Sudan, and the Anglo-Egyptian Sudan. Parts of it belong to the French, but the region has no very definite boundaries. See also *Anglo-Egyptian Sudan.*
Sudbury is an industrial town of Suffolk. It stands on the River Stour and was the birthplace of the artist Gainsborough.
Sudbury. A town of Ontario, Canada. Nickel was found here during the later nineteenth century and the town has since become a centre of the mining industry, **3**, 158, 196; **4**, 386
Sudd is the name given to the thick river vegetation which would clog the course of the River Nile were it not cleared regularly, **4**, 197
Sudetenland. The Sudetenland was a border region of Czechoslovakia, adjoining Germany, whose people were of German stock. It was demanded by, and given to, Germany in 1938 and was the cause of the Munich crisis of that year, **2**, 246; **4**, 78
Sudras form a caste of Hindus. They are descended from ancestors who were workers and builders, **3**, 319
Suez Canal, is nearly a hundred miles in length and links the Mediterranean and Red Seas, thus shortening the sea journey to the east by some 4,000 miles. It was built by the famous French engineer, Ferdinand de Lesseps, and opened in 1869, **2**, 412; **4**, 195; **5**, 53 *et seq.*
Pictures: A Gateway to the Suez Canal, **4**, 191
Between Mediterranean and Red Sea, **5**, 56
Ships That Pass, **5**, 57
Colour Plates. Coaling at Port Said, **4**, *facing* 196
Under the Desert Stars, **5**, *facing* 37
Suffolk is a county of eastern England concerned mainly with agriculture. The Little Ouse, Waveney, Orwell and Stour are its chief rivers and it has only low hills. It contains part of the Broads and is famous for its " Suffolk Punch " breed of horses.
Ipswich is the county town for East Suffolk and Bury St. Edmunds in the West, while Lowestoft is important because of its fishing interests, **3**, 59 *et seq.*
Pictures: From Tudor Times, **3**, 61
Flatford Mill, **3**, 62
Suffolk Punch is the name given to a chestnut heavy-draught horse often found at work on farms in East Anglia, **1**, 97
Suffragettes was the name given to women who took up militant activities, such as window-smashing, in the fight for Parliamentary votes for women, **2**, 231
Sugar is the sweet matter obtained from sugar-cane or sugar beet in a refinery. Sugar-cane is a form of grass grown in tropical climates. It reaches a height of about 15 ft. and its juice is extracted by crushing. The growing of sugar-cane is a major industry in the West Indies, but is important in other parts of the world.
—Australian sugar, **3**, 210, 226
—Sugar from the West Indies, **3**, 397
—Sugar-cane in South Africa, **3**, 303
—Sugar in Peru, **4**, 326
Pictures: Harvesting sugar-cane in India, **3**, 330
Harvesting Sugar-cane in Cuba, **4**, 309
Taking Sugar-cane to the Factory, **4**, 391
Sugar Beet is a variety of beetroot cultivated entirely for its sugar content which is obtained from it in large factories. It is an especially important crop in East Anglia, **3**, 65; **9**, 414
Pictures: Attacking Disease, **1**, 391
Making Sugar from Beet, **3**, 63
Sugaring is a method of catching moths, **8**, 285
Picture: **8**, 289
Sugar Loaf Mountain. (1) A peak in Monmouthshire, about three miles north-west of Abergavenny, **3**, 415
(2) A coned mountain near Rio de Janeiro, **4**, 311
Pictures: Ascending the Sugar Loaf, **4**, 312
Most Famous of Rio's Peaks, **4**, 313
Sugar Squirrel is the name given to a species of phalanger (*q.v.*) found in New South Wales.
Sui Dynasty ruled China from A.D. 589 to 618. It was during this period that

BREAST STROKE AND BACK CRAWL

THE BREAST STROKE



THE BACK CRAWL



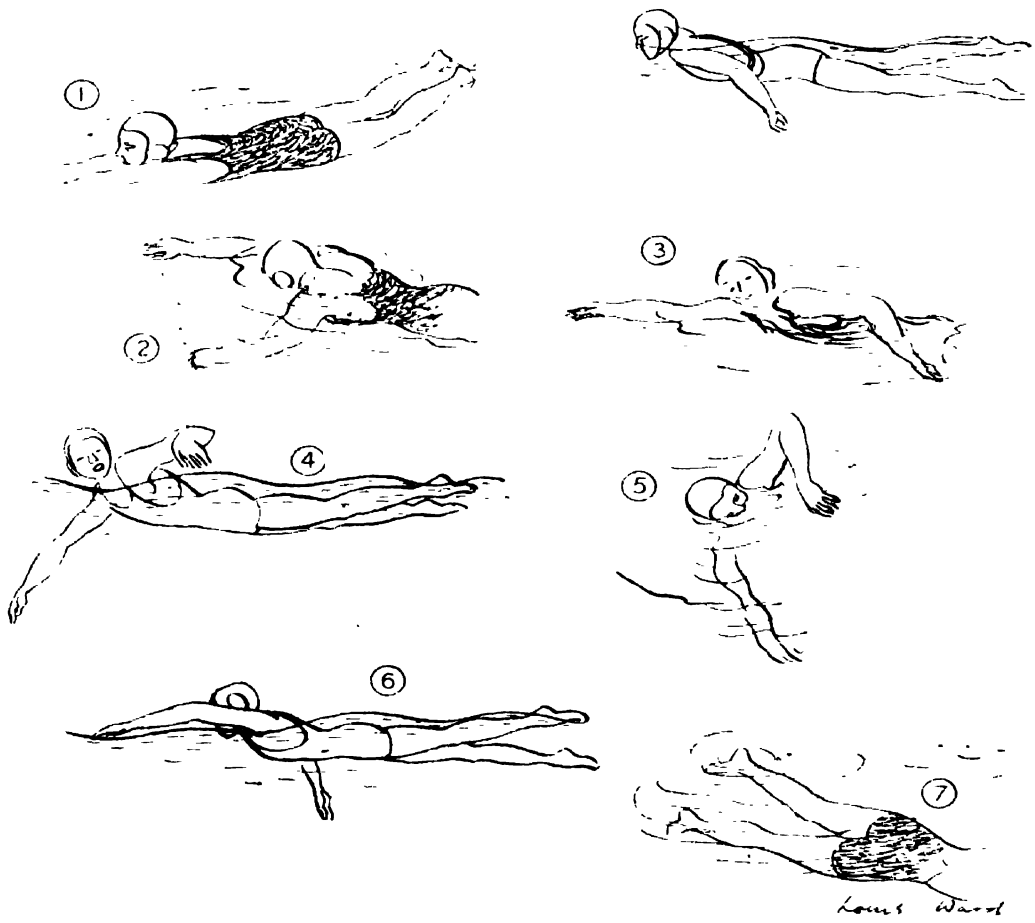
As an enjoyable recreation, a competitive sport, or an essential accomplishment for all healthy persons to acquire in their youth, *Swimming* (see p. 366) needs no recommendation. In these drawings the popular strokes are shown. The Breast Stroke, old-established but always popular, begins with (1) palms down ; (2) arms extended ; (3) maintained for a second or two, legs drawn up , (4) both arms sweep back, legs stretched outwards. In the Back Crawl (1) the body is nearly flat on the water ; head lifted a little, toes pointed ; (2) left arm thrown out ; (3) right arm same movement ; hands are dropped palm downwards and pressure applied. The kick is the Crawl reversed.

THE BUTTERFLY STROKE AND THE CRAWL

THE BUTTERFLY BREAST STROKE



THE CRAWL



Specially drawn for this work

The Butterfly Breast Stroke is made with arms thrown outward and forward from the chest. As soon as the hands fall on water they press vertically down. The leg movements are the same as for the Breast Stroke, already shown. In the Crawl (1) the body is flat on the water, arms forward, legs together, toes pointed, relaxed; (2) left arm starts downward pull and moves through third of a circle, left shoulder lifted slightly; (3) right arm thrown forward, (4 and 5) right arm is then pressed down third of a circle; left arm thrown forward. The leg movements (6 and 7) as one foot is lifted the other goes down, toes pointed

the Grand Canal was extended southwards to Hangchow, **4**, 226

Suir is a river of southern Eire. Upon its banks stands Waterford, **3**, 152

Sukkur is a town in the Sind Province of Pakistan, standing on the River Indus. It is famous for the *Sukkur Dam*, which provides irrigation for vast barren lands, **3**, 344; **5**, 78

Sukna. A town on the route from Calcutta to Darjeeling, **3**, 348

Sukoveyi. This is the name of the dry winds that blow across the eastern Ukraine from the Caspian Sea and Central Asia, **4**, 112

Sukumaland. A part of Tanganyika Territory on the southern shores of Lake Victoria, **3**, 374

Suleimanieh Mosque is the finest mosque in Constantinople and dates from the period 1549-57, **4**, 164

Suleiman the Magnificent ruled the Turkish Empire from 1520 until 1566 during which time the Empire was at the height of its power, **4**, 164

Sulina is the name of a Roumanian port which stands on the coast of the Black Sea where one of the mouths of the River Danube empties into that sea, **4**, 88, 104

Sullivan. An important lead-zinc mining centre of British Columbia, Canada, **4**, 386

Sullivan, Sir Arthur Seymour (1842-1900) Famous British musical composer He was in close association with Sir W. S. Gilbert in the production of light operas, **7**, 189

Sulphate is a salt of sulphuric acid When this acid acts on copper, the hydrogen in it is replaced by copper, and sulphate of copper results

Sulphur. A pale yellow substance, hard and brittle, one of the non-metallic elements (symbol S). It is also called brimstone.
Sulphur is found in a more or less pure state in volcanic districts, especially in or near craters of volcanoes, **9**, 414

Sulphuretted means mixed or combined with sulphur. The chemical combination of hydrogen and sulphur produces sulphuretted hydrogen, a very unpleasant gas It is used in chemical analysis

Sumatra is a large island of Indonesia and was discovered by the Portuguese. Its products in normal times include teak, camphor-wood, and crops of many kinds. Padang and Palembang are two of its chief towns. See *Indonesia.*

Sumerians were a race who settled in the plain of Shinar (later known as Sumer) in Mesopotamia They built up a civilization similar to that of the Egyptians which lasted from about 3500 to 2700 B.C. Their mode of writing developed into the Cuneiform writing, which had triangular characters, **9**, 12
Picture. King Arad-Sin, **9**, 8

Summerhill Creek is about twenty miles north of Bathurst, New South Wales, Australia. Here, in 1851, Edmund Hargraves discovered gold, **3**, 204

Summer Time, or Daylight Saving, was originated by William Willett (1857-1915) and was first adopted in this country in 1916. By it the legal time from spring to autumn is an hour in advance of Greenwich Mean Time. Double Summer Time (two hours in advance of G.M.T.) was in force 1941-45 and 1947.

Sun. The heavenly body from which we derive heat and light is the centre of the "solar system." This system includes the earth and eight other planets and their satellites, which revolve round the sun, each in its own path or "orbit." The sun is composed of a mass of very highly heated gases, and its surface temperature is over 12,000° F. It is of enormous size, its diameter being 864,100 miles in length, and it is about 93 million miles from the earth. See *The Sun and the Moon*, **8**, 107 *et seq.*
eclipses. See *Eclipses of the Sun.*
Pictures. The Planets and the Sun, **8**, 107
The Solar System, **8**, 108
What the Greeks thought, **8**, 109
A Journey to the Sun, **8**, 116
The Sun and its Spots, **8**, 118
Sun Storms, **8**, 120, 121, 122
Sunspots at Close Quarters, **8**, 123
Photographing an Eclipse of the Sun, **8**, 124
Solar Eclipses, **8**, 125, 126, 127
A Total Eclipse, **8**, 130
The Surface of the Sun, **8**, 131
Fantastic Fire Clouds, **8**, 132
Colour Plate Flaming Outbursts from the Sun, **8**, *facing* 161

Sun-Bear. An animal found in Malaya It feeds upon honey and ants and is small in size.

Sun Birds are found only in tropical countries They are small in size and are noted for their gorgeous plumage

Sun-Bitterne. A crane-like bird found in parts of South America. It is gaily coloured and the male spreads its wings so that he looks like a very large butterfly

Sundarbans is the name given to the lowlands of the Ganges delta in India They are largely planted with jute, **3**, 345

Sunderland is a large town and port of County Durham standing at the mouth of the River Wear, **3**, 81

Sundew. A fly-trap among plants. It has leaf-hairs which fold over its prey, **1**, 339
Pictures A Plant that Lives on Insects, **1**, 341

Sundial. Probably the earliest device of primitive man to mark the passage of time was a sundial. Those of ancient Egypt and of Greece and Rome were not so ornamental as the ones in use today. They were simple blocks of stone, so placed that the shadow of a part of one block fell across a scale of time marked on the other block, **9**, 219
Colour Plate: Time Recorders, **9**, *facing* 224

Sun-Fish are found almost solely in America. They make nests and some specimens are 6 ft. in length and almost as thick as they are long.

Sunflower. A race of popular flowering plants. The family name is Helianthus.
—the annual form, **8**, 278
Picture: **8**, 276

Sunshine Recorder. An instrument by means of which the sun's rays are focussed.
Picture: "Campbell-Stokes" recorder, **5**, 18

Sunshine Vitamin is the name given to vitamin D. It can be produced in the body by the action of sun on the skin, **8**, 224
Picture: Artificial Sunlight Aids the Doctor, **7**, 387

Sun-Spots are composed of a dark central part (the *umbra*) and a lighter fringe (the *penumbra*) surrounding it. They are generally circular in shape and may measure 3,500,000 square miles. They affect the earth's magnetism, **8**, 120 *et seq.*
Pictures. The Sun and its Spots, **8** 118
A Sun Storm, **8**, 120, 121
More Sun Storms, **8**, 122
Sun-spots at Close Quarters, **8**, 123

Sun Spurge. A wild plant bearing green flowers which turn towards the sun as do the blooms of the sunflower. The name is the same as that used by the ancient Greeks.

Sun Starfish. May be 10 in. across and has twelve rays or arms; it looks like a scarlet sunflower, **1**, 234

Sunstroke. As a first aid remedy, take the patient to a cool, shady place. Remove clothing and douche the head and neck with cold water. Give only water to drink, **8**, 244

Sun Tzu Ping Fa is the name of one of the oldest books in the world, a treatise on the art of war written in China in the sixth or fifth century B.C., **4**, 224

Sun Yat-sen, Dr. (1866-1925). The Chinese national leader who led the revolutionary movement which overthrew the Manchu emperor and established the Chinese Republic. His party was known as the Kuomintang (People's Party), **4**, 230 *et seq.*

Superior is one of the five Great Lakes of North America, 400 miles in length and 160 miles in breadth. It is the largest lake of fresh water in the world, **3**, 160, 178; **4**, 266
Pictorial Map **4**, 291

Superior Conjunction is a term used by astronomers. It means that when a planet is passing on the other side of the sun and is in line with the sun and earth the planet is said to be in superior conjunction, **8**, 140

Supermarine. Name of a famous type of British aeroplane.
Picture. Supermarine 508, **5**, 222

Super-Pacific. Name of a class of locomotive engine used on the former L.N.E.R.

Superstition means an ignorant belief or fear of what is mysterious or unknown. Among common superstitions are the belief that it is unlucky to sit down thirteen at table, to walk under a ladder or to spill salt. Superstitions connected with ships and the sea are many and varied. See *Romance of the Sea*, **8**, 47

Supremacy, Act of (1534). This act abolished the authority of the Pope in England and made Henry VIII the Head of the Church of England, **2**, 406

Supreme Soviet of the U.S.S.R. This is the law-making body of the Soviet Union and consists of elected representatives, of whom there are more than 600 (these form the Council of

the Union) and a second chamber of elected representatives forming the Council of Nationalities, **4**, 122

Surat, on the West coast of India, was where the East India Company set up their first trading station. Today Surat is one of the principal cities with a population of over 170,000.
Picture: **4**, 340

Suriago is the name of the north-eastern peninsula of the island of Mindanao in the republic of the Philippines. Its iron mines work some of the largest known deposits of ore in Asia, **4**, 214

Surinam is another name for Dutch Guiana. See *Guiana, Dutch.*

Surnames and Titles. "Smith" is the commonest name in Great Britain and Ireland. "Sir" is a shortened form of "Sire" while "Mrs." is a contraction of "mistress," **9**, 357

Surrey is a county of southern England across which run the North Downs. The Thames, Wey and Mole are its chief rivers, its interests being mainly agricultural, sheep being run on the Downs.
Guildford is the county town.
Pictures Polesden Lacey, near Bookham, **3**, 409
On the North Downs in Surrey, **3**, 414

Surrey Commercial Docks are one of the groups of docks on the Thames administered by the Port of London Authority. They are the only docks south of the river and are the centre of the softwood timber trade, **8**, 90

Suraj-ud-Dowlah (1737–57). Nawab of Bengal. He imprisoned British captives in the Black Hole of Calcutta and was later executed for this crime, **2**, 185, 409

Susa. An ancient city of Persia. Its fabulous wealth was taken by Alexander the Great in 331 B.C., **2**, 44

Susi was one of the faithful followers of Dr. Livingstone, **2**, 338

Suspension Bridges make use of steel chains or cables running over high towers and anchored firmly to the ground. From these a platform is hung, **5**, 43
Pictures Painting the Menai Suspension Bridge, **5**, 44
A Suspension Bridge, **5**, 45
Section of the Hudson River Bridge, Washington, **5**, 48
Steel Cables in Position (Hudson River Bridge), **5**, 49
Photo-tone Supplement: Bridges Big and Little, **5**, *between* 64 and 65

Sussex. A county of Southern England with a long coast line to the English Channel and all the beauties of the South Downs. It has the Rivers Adur, Arun, Sussex Ouse and Rother and is celebrated for its Southdown sheep.
Brighton, Eastbourne, Hastings, Bexhill and Bognor Regis are towns of Sussex and Chichester its city. Lewes is the county town, **3**, 33 *et seq.*
Pictures: The "Seven Sisters" of Sussex Downland, **3**, 33
Sussex Corn, **3**, 35

Sussex Ouse. River which passes by Lewes and enters the sea at Newhaven, **3**, 33

Sutherland Falls, with water cascading in a drop of 1,904 ft., are to be found in the neighbourhood of Milford Sound in the South Island of New Zealand.
Picture. **3**, 267

Sutherlandshire is a county of Northern Scotland. It has a very extensive coast-line, which includes Cape Wrath, and possesses numerous sea-lochs. Sheep-rearing forms the chief industry, the country being mountainous and having many deer-forests. Dornoch is the county town.

Sutlej. A river of India rising in the Himalayas and flowing through the Punjab to join the Indus, **3**, 348

Suttee is the name of an ancient Indian custom which compelled a widow to throw herself on the funeral pyre of her late husband, **2**, 271

Sutton, Thomas (1532–1611). A wealthy London merchant who founded and endowed the Charterhouse—both school and hospital

Suva. The capital of Fiji on the island of Viti Levu in the Pacific. It has a population of over 11,000, **3**, 391

Suzukava is a small town on the road from Tokio to Kyoto in Japan
Picture. **4**, 248

Svalbard. A group of islands in the North Arctic, in which are included West Spitsbergen and Bear Island The chief product is coal, the main coalmining station being Longyear City. The group is also known by the name Spitsbergen, **2**, 297
Picture: **4**, 39

Sverdlovsk is an important town of the Ural mountains in the Soviet Union Here there are large machine-construction plants, **4**, 117, 118

Sverdrup, Otto. A Norwegian navigator and explorer, he was associated with Nansen. He was captain of the *Fram* in Baffin Bay.
Pictures The *Fram* Farthest North and Farthest South, **2**, 355
At Supper in the *Fram*, **2**, 356

Swahili is a language spoken by the natives of Kenya Colony and in Zanzibar. It is the official tongue in East Africa (also spelt Swaheli), **3**, 378

Swale. A river of the North Riding of Yorkshire which flows down from the Pennines to join the Yorkshire Ouse. Its valley is said to be the most beautiful of the Yorkshire dales.
Picture **3**, 81

Swallow. A migratory bird which visits Britain in April and leaves in late September. Its upper parts are blue-black except for a patch of russet red on the forehead, there is a greenish gloss on the wings and the under parts are a creamy or buff colour. It has very long wings and the tail is forked, most of the feathers having an oval white spot.
Special Colour Supplement. British Wild Birds, **1**, *between* 160 and 161 (Plate 1)

Swallow Falls, on the River Llugwy, are found near Bettws-y-Coed, North Wales, **3**, 106
Picture. **3**, 104

Swamp Indians live in riverside huts on the lowlands of British Guiana. They make dug-out canoes, **3**, 386
Picture: **3**, 385

Swan. A long-necked, short-legged bird, belonging to the duck family, and frequenting rivers and streams It nests near the water and is known as a "royal bird" The young, known as cygnets, are light brown. The black swan was discovered in Australia in the eighteenth century. On the Thames the swans belong to the Queen and two City Companies, and the custom of marking and counting the swans is known as "swan-upping," **1**, 164, 201
Pictures. **1**, 201; **10**, 331

Swan, Sir Joseph (1828–1914) A famous English chemist and electrician who produced in 1884 a silken thread in the course of his experiments for making electric light filaments, **6**, 347

Swanage, a popular holiday resort of Dorset, in the Isle of Purbeck It has a Gothic Clock Tower which was once a Toll House on the Surrey side of London Bridge.

Swan, Black. See *Black Swan.*

"Swan-King" was a name given to King Ludwig II of Bavaria. He was particularly fond of these birds, **4**, 84

Swan-Markers. Men who put the marks on the Thames swans in carrying out the custom of "swan-upping," **1**, 201
Picture. **10**, 331

Swan River of Western Australia flows into the Indian Ocean at Fremantle, **3**, 219
Picture **3**, 219
Photo-tone Supplement Two Australian State Capitals, **3**, *between* 240 and 241

Swansea is a county borough and seaport of Glamorganshire noted for its tin plate and spelter industry, oil refineries and coal exports It is the second largest borough in Wales, **3**, 94 *et seq*
Photo-tone Supplement Modern Architecture (Swansea Civic Centre), **7**, *between* 288 and 289

Swan, The (or Cygnus) is the name of a group or constellation of the stars.

Swarming. Term applied to a colony of honey bees when they fly off with the queen to found a new hive, **1**, 260
Picture **1**, 261

Swath is the name given to the line of cut grass as left behind it by a mowing machine in a hayfield, **6**, 386

Swaziland is one of the High Commission Territories in South Africa In common with Basutoland and the Bechuanaland Protectorate, it is administered by a High Commissioner in London working through a Resident Commissioner Swaziland is bounded on three sides by the Transvaal, and on the east by Mozambique and Zululand Mbabane is the centre of government. There are agricultural products such as cotton, tobacco, and maize, and mineral wealth includes asbestos (produced in large quantities at the Havelock Mine, Emlembe).
Picture: **3**, 279

Sweden is a country of Northern Europe occupying the larger part of Scandinavia. It is mountainous inland but there is much scope for agriculture.
Sweden has a great wealth of timber,

extensive fisheries and minerals as well as manufacturing industries. Stockholm is the capital. Population is nearly 6,800,000, **4**, 33 *et seq.*; **4**, 357
Pictures: Sawmills at Sandviken, **4**, 36
A Home of Old Sweden, **4**, 37
Built by a Swedish King, **4**, 38
Stockholm from the Air, **4**, 43
Stockholm's West Bridge, **4**, 44
Ferryboats Link the Railways of Sweden and Denmark, **4**, 45
Lumber at a Swedish Mill, **4**, 350

Sweet Brier. A plant which is often grown as a hedge or shrub on account of its fragrance after a shower.
—in Tasmania, **1**, 338

Sweet Chestnut. Also known as the Spanish Chestnut is the true chestnut, a tree brought to this country by the Romans. It produces a fruit that is a common article of food in Europe and U.S.A. The trunk of the tree often assumes a curious twist, **1**, 407
Pictures: Trunks of the Tree, **1**, 317
Tree in Full Leaf, **1**, 403

Sweet Pea. One of the most popular of our garden annuals. It has climbing stems and produces clusters of fragrant flowers at the end of long stalks. Many different colours are produced, **8**, 278
Picture: **8**, 275

Sweet Scabious. See *Scabious.*

Sweet Sultan. A hardy annual plant bearing mauve, yellow or white flowers, **8**, 278

Sweet William. One of the hardy biennials bearing very fragrant blossoms, **8**, 278
Picture: **8**, 275

Swell. Two Cotswold villages bear this name, Upper and Lower Swell. Both are noted for their typical Cotswold buildings, **3**, 24

Sweyn Forkbeard. King of Denmark He invaded this country many times. He died in 1014, **2**, 90, 404

Swift. A family of birds inhabiting Central Asia which migrates to Britain in the summer. The Swift has a short forked tail and the wings are longer than the body. In flight it resembles the swallow, but is not actually a member of the swallow family. The speed of flight and piercing cry enables it to be identified. It can climb tree trunks and even rough walls.

Swift, Jonathan (1667–1745). Born in Dublin, he became a clergyman and was made Dean of St. Patrick's. In 1726 he published his famous *Gulliver's Travels*, **2**, 179; **7**, 202
—his monument in St. Patrick's Cathedral, Dublin, **3**, 150
Poem: The Vowels, **9**, 90
Pictures. Dean Swift and Stella, **7**, 202
Among the Lilliputians, **7**, 203

Swimmerets. Leg-like growths found in lobsters and prawns to enable these creatures to swim, **1**, 234

Swimming is the art of moving progressively through water. The breast stroke was formerly regarded as the basis of swimming knowledge, but is not a fast stroke and has been largely superseded by the crawl.
Pictures: Breast Stroke and Back Crawl; Butterfly Stroke and Crawl, **10**, 362–3

Swinburne, Algernon Charles (1837–1909). One of the greatest of nineteenth-century English poets, **2**, 221; **7**, 149

Swindon. Market town of Wiltshire. Here are the locomotive and carriage building and repair works of the Western Region of British Railways. The town takes its name from the Danish King Sweyn, **3**, 18
—remains of the stegosaur found here, **1**, 22

Swinnerton, Frank Arthur (born 1884). Modern novelist, his works include *The Merry Heart* and *Nocturne*, **7**, 262

Switzerland. This European country is completely surrounded by land and contains much forest land and a considerable part of the Alps. It is a Confederation of twenty-five cantons and a Federal Capital at Berne. French, German, and Italian, are spoken in the cantons nearest these countries. Besides being a famous holiday ground, Switzerland is an important industrial country. Berne is the capital, the total population numbers more than 4,250,000. See *Switzerland, The Playground of Europe* **4**, 53 *et seq.*, 363
—the beginning of Switzerland, **2**, 406
Pictures: Lined Up and All Ready for the Start, **4**, 53
The City of Berne, **4**, 54
Mountain Pastures, **4**, 54
The Castle of Chillon, **4**, 54
The Jungfrau, **4**, 55
The Armoured Bear, **4**, 55
Geneva, the Reformation Monument, **4**, 55
Where Calvin and John Knox Preached, **4**, 56
Snows of the Matterhorn, **4**, 57
A Canine Rescuer, **4**, 58
Lovely Lucerne, **4**, 59
Alp-Horn Players, **4**, 60
The Spring Festival in Zurich, **4**, 61
An Alpine Giant, **4**, 62
In Scheidegg's Winter Snows, **4**, 63
Fashionable St. Moritz, **4**, 64
Photo-tone Supplement: The Continent of Europe, **4**, *between* 112 and 113
Colour Plate Cattle Grazing beneath the snow-clad peaks of the Bernina Alps, **4**, *facing* 53

Swordfish. A fish having a snout developed like a sword. The creature may weigh 800 lb., **1**, 219
Picture. **1**, 223

Sword in the Stone, The. A Tale of King Arthur and the Round Table, **5**, 383

Swynnerton, Annie Louisa (1844–1933). A prominent British woman artist, **7**, 113
Picture: **7**, 113

Sycamore. A tree belonging to the maple family, sometimes known as the Great Maple. It bears large leaves and the seed-pods form on winged stems so that they may be freely scattered, **1**, 412
Picture. **1**, 409

Sydenham Hill, London. Site of the Crystal Palace, destroyed by fire in 1936, **2**, 214

Symbol. An emblem or sign. The Cross is the symbol of the Christian Church. Britannia, holding a trident is the symbol of Britain.
In these volumes small drawings at the head of a new section are symbolic headings, indicating the subject dealt with in the pages that follow.

Symphony. A harmonious blending of sounds or colours; a long musical composition played by an orchestra. Symphonies of the second kind, also called orchestral sonatas, were first composed by Hadyn and Mozart, and perfected by the genius of Beethoven.

Sydney is the capital of New South Wales, Australia and the largest city in the Commonwealth. It has one of the finest harbours in the world, splendid buildings and beautiful bathing beaches. Its population is over 1½ million, **3**, 230 *et seq.*
—the first settlement, **2**, 410; **3**, 202
Pictures: Transporting Prize Rams by Air, **3**, 214
Australia's Largest City, **3**, 231
Where Overseas Liners Berth, **3**, 232
Sydney's Sands and Surf, **3**, 233
Girders for Sydney Bridge, **6**, 83
In Australia's Largest City, **7**, 337
Colour Plates. Sydney Harbour Bridge from the City, **3**, *facing* 204
The Founder of Australia, **3**, *facing* 205
Photo-tone Supplement Two Australian State Capitals, **3**, *between* 240 and 241
Modern Architecture (two modern buildings), **7**, *between* 288 and 289
Pictorial Map **3**, 243

Synod (Council) of Whitby (A.D. 664) linked the English Church with that of Rome, **2**, 404

Synonym is a word having the same, or nearly the same, meaning as another. To achieve facility in writing or speaking it is useful to have in one's memory a store of such words. The uses of synonyms are dealt with in **8**, 206 *et seq.*, where a list of them is given.

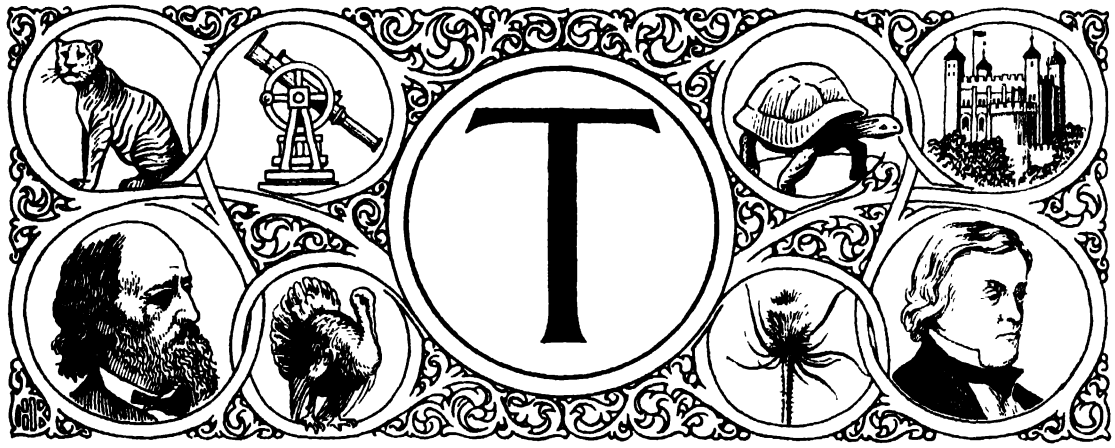
Syracuse is an ancient town on the eastern coast of Sicily It is noted for its relics of Greek and Roman occupation, **4**, 154

Syria is an independent republic in the Middle East standing to the north-east of Palestine. Parts of it were included in the Holy Land of Bible days. It achieved its independence in 1944. Aleppo is the most populated town. Damascus is the capital, and one of the oldest still inhabited cities in the world. It is a predominantly agricultural country, **4**, 174, 190, 367
Pictures: "The Street which is called Straight," **4**, 174
In the Land of Syria, **4**, 176
The Desert City that Challenged Imperial Rome, **4**, 178
The Silent Ruins of Baalbek, **4**, 180
A Former Guardian of the Crusader Road, **4**, 186

Syringa. See *Philadelphus.*

Szechwan is a province of south-west China. The mountain ranges which run through the province rise in places to more than 25,000 ft., **4**, 234, 238
here is found the Giant Panda (*q.v.*), **1**, 64

Szczecin. Formerly known as Stettin and once Germany's greatest port and naval base on the Baltic shore, this seaport is now Polish, **4**, 128



T is the twentieth letter of our alphabet. Being sounded by bringing the tongue against the base of the upper teeth, it is classed among the dentals. It represents the "hard" sound corresponding to the "soft" sound of D. In many words it is silent or unpronounced: for example, in "often," "whistle" and "moisten." Combined with H it gives two different sounds—soft in "bathe," hard in "this."

The letter is sometimes used to denote shape: as in T-square, T-iron, and T-beam. A thing is said to be "right to a T" if it is perfectly accurate or correct.

In O.T. (Old Testament), P.T.O. (please turn over), T.C.D. (Trinity College, Dublin), B.T.U. (Board of Trade Unit) and T.O. (Telegraph office) the letter is used as an abbreviation in different senses.

Tabard Inn in Southwark is famed as the hostelry from which Chaucer and his pilgrims set out.

Taber. A town of southern Alberta, Canada, which has come into prominence as one of the centres of the oil industry.
Picture: **3**, 192

Tableau. A picturesque representation; especially one of an historical scene by people suitably dressed and remaining quite motionless, in which case it is a tableau-vivant, or living picture.

Table Bay. A bay at the south-western tip of Africa. On its shores is built the city of Cape Town. In earlier times, it was used only as an anchorage by the Portuguese, **3**, 276, 280
Photo-tone Supplement: The Union of South Africa, **3**, *between* 304 and 305

Tablecloth is the name given to the mists that often cover the flat top of Table Mountain, in South Africa, **3**, 281
Picture: **3**, 276

Table d'hôte. A term generally used for a set meal in a restaurant at a fixed price.

Table Mountain, which rises to a height of 3,000 ft., towers behind the city of Cape Town, **3**, 281
Picture: **3**, 276
Photo-tone Supplement: The Union of South Africa, **3**, *between* 304 and 305

Tabora is a town of Tanganyika Territory and an important railway centre, **2**, 338; **3**, 370

Tabriz is a town of Iran (Persia) noted for its beautifully-woven carpets, **4**, 204

Tabu. Native word of the Polynesians meaning untouchable. We use the term to mean that anything prohibited to us is tabu (also spelt "taboo"), **1**, 368; **9**, 362

Tacitus (*c.* 55–120). A Roman lawyer and historian who wrote a history of the Roman Empire and other works. He mentioned the prosperity of London as a port around the year 61 in his writings, **8**, 87

Tacking is used to keep two pieces of material in place while they are being sewn together, **8**, 407
Picture: **8**, 408

Tacking Stitch is a method of stitching or sewing, **8**, 380
Pictures. Designs for Tacking Stitch, **8**, 384
A Border in Tacking Stitch, **8**, 407

Tacoma is a large Pacific seaport, terminus of the Northern Pacific Railway. It is in the State of Washington, U.S.A.

Tadcaster is a town of the West Riding of Yorkshire, a centre for brewing.

Tadjiks. A race of Central Asiatic people found chiefly in the Soviet republic of Tadjikstan, but encountered elsewhere in Central Asia, **3**, 340

Tadpole. The young of the frog and toad as they emerge from the spawn, **1**, 154

Tafas. A village in Arabia whose inhabitants were massacred during the war of 1914–18. It figures in the story of Lawrence of Arabia, **2**, 386

Taflet. A port of Morocco, the French protectorate in North Africa, from which dates are shipped, **4**, 166

Taganrog is a seaport and town of the Soviet Union on the Sea of Azov. It makes iron and steel goods, **4**, 112

Tagiet was the name of the Tartar who first struck oil on the shores of the Caspian Sea, **6**, 310

Tagus. An important river of Spain and Portugal, its mouth forming a large harbour. From the Tagus Bartholomew Diaz sailed in 1487, **2**, 286, **4**, 135, 137

Tahiti is in the Pacific, in the Society Islands and is the most important of the French Settlements in Oceania. It was visited by Captain Cook, 1769, **2**, 312
—visited by Charles Darwin, **2**, 346

Taiga is the name given to the great forest lands of northern Siberia, **4**, 110
Picture **4**, 108

Taihoku (Taipei) is capital of the island of Formosa (*q v.*)

Tailor Birds are found in parts of Asia. They make their nests by sewing leaves together with strands of fibre.

Taimyr. A famous ice-breaker belonging to the Soviet Union. This vessel rescued Russian scientists after an adventure at the North Pole.
Picture: **2**, 362

Taiwan. See *Formosa.*

Tajamulco is the highest volcano in Guatemala. It is 13,814 ft. high, **4**, 299

Taj Mahal. Name of the loveliest specimen of Indian architecture built near Agra by Shah Jehan to the memory of his queen, **3**, 328
Picture. **3**, 327

Takin. Name of a horned, goat-like animal found in the mountains of Tibet and parts of Northern India.

Takla-Makan is a vast sandy desert of western China, **4**, 238

Takoradi is a fine modern port of the Gold Coast, West Africa, **3**, 380

Talavera is a Spanish town on the River Tagus. Near it Wellington gained a famous victory in the Peninsular War, 1809, **2**, 203, 349

Talbot, Ethel. Well-known writer of poems and stories for children
Poem. Crab-Apple, **9**, 98

Talbot, W. H., Fox (1800–77). A pioneer of photography. Some of his experimental work was carried out in the village of Lacock in Wiltshire.
Picture. **3**, 410

Tallahassee, on the Gulf of Mexico, is capital of the U.S.A. State of Florida.

Tallal was head sheik of the village of Tafas which figured in the war against the Turks, **2**, 387

Tallinn is the capital of Estonia, the Baltic state which is now once more part of Russia, **4**, 52

Tallis, Thomas (1515–85). One of the early English composers of music, **7**, 157, 158

Talon. One of the long curved claws of a bird or beast of prey, shaped specially for gripping and rending.

Tamandua. An ant-eater that lives almost entirely in trees. It is found in South America.

Tamar is a river of Devon and Cornwall. It flows into Plymouth Sound, **3**, 50

Tamarack is the name of a species of larch tree grown in the conifer forests of Canada, **3**, 167

Tamarisk. Shrub-like plants with feather foliage and pinkish flowers. They grow profusely on parts of our coast.

Tamatave is the chief seaport of Madagascar.

Tambourine. The familiar tambourine is a small instrument of the drum family fitted with loose metal discs called jingles. It has long been used in almost all parts of the world, including the old civilisations of Arabia, Egypt and Rome. See *Musical Instruments.*

Tamil. A language spoken in parts of India and Ceylon, and so the name of the race of people which speaks this language, **3**, 361

Tamins is a small town of Switzerland through which, as a mountain stream, the infant Rhine flows, **4**, 65

Tammerfors is an important iron and steel town of Finland. It is also a cotton town and is sometimes called "the Manchester of Finland," **4**, 50

Tampico is the chief port and commercial centre of Northern Mexico. It lies a short distance up the Panuco river and has large oil tanks and refineries, **4**, 299

Tanagar. A small bird of the finch type with very gay plumage. It is found only in the tropical parts of America.

Tanagar, Organist. See *Organist Tanagar.*

Tanga. A northern port of Tanganyika Territory in British East Africa. From here a railway runs on to Moshi and Arusha, **3**, 370

Tanganyika is the name of one of the large fresh-water lakes of Africa. It is about 450 miles in length **2**, 335, 370

Tanganyika Territory. This part of East Africa was once a German colony, but was placed in Britain's care by the League of Nations and is now administered by Britain under United Nations trusteeship. The capital and chief port is Dar-es-Salaam. There are good forests, but agriculture is the main industry, sisal being the main crop. The area is about 360,000 square miles, which includes 20,000 square miles of water. See *British East Africa*, **3**, 369 *et seq.*

T'ang Dynasty ruled China from A.D. 618–907. Under the rule of the T'ang Emperors, there was brilliant artistic and cultural achievement, **4**, 226

Tangerine. A name given to a small type of orange which we often eat at Christmas time. Tangerines are thought to have been the golden fruit which legend says Hercules found in the Garden of the Hesperides. Their name comes from the Moroccan port of Tangier.
Picture: **4**, 129

Tangier is a seaport of Morocco opposite Gibraltar. Although it is within the territory of the Sultan of Morocco, it forms an international zone although it is recognised that this is not a permanent arrangement in its present form, **4**, 166
- the birthplace of Ibn Batuta, the fourteenth-century traveller, **2**, 271
Pictures: Tangier's Spacious Promenade, **4**, 129
The North African Shore, **2**, 165

Tank. Name which was given to an armoured fighting vehicle during its experimental stages and has continued ever since. The Tank travels on endless bands, or "tracks" to enable it to go over rough ground. First used in the battle of the Somme in 1916, the Tank has become an important part of the military equipment for modern warfare, **2**, 238; **5**, 178
Picture: The Centurion Tank, **5**, 180

Tank Engine. A locomotive without a tender, having its own tanks for water and a coal bunker. Tank engines are used for suburban traffic, **9**, 394

Tanker is the name given to a ship specially built to carry oil, **6**, 314
Pictures. **6**, 317, 318
Photo-tone Supplement Shell Tanker "Dromus," **5**, *between* 272 and 273

Tanks of Aden, nine in number, are reservoirs for holding water from a towering hillside. They were built before the time of Christ and can be seen at Aden, the British colony and protectorate in Arabia.

Tannenberg is in the south of what was formerly East Prussia, in the Masurian Lakes district. It was the scene of a battle between the Germans and the Russians in the war of 1914–18 in which the Germans were victorious, **2**, 235

Tannery. A place where skins and hides are tanned, that is, changed into leather by being soaked in a liquid. In a tannery you will see huge tanks, filled with a solution of oak-bark and chemicals, in which skins are kept steeping for months until they become supple and more durable.
Tanning is usually preceded by removal of the hair on a hide, followed by currying or softening processes.

Tannic Acid, used in the tanning of leather, for making ink and in certain medicines, is obtained from the bark and gall-nuts of the oak tree, **1**, 333

Tansy. A wild plant found at the roadside and in waste places. It bears yellow, button-like flowers. In olden days the leaves were used for Tansy tea, and they are still in demand for medicines, **1**, 306, 333
Picture: **1**, 334

Tantalum is one of the metallic elements (symbol Ta). Combined with carbon it becomes as hard as a diamond. It is used as an alloy with steel and also in the manufacture of filaments for electric lamps, **9**, 406

Tao means a road, way, or method, and is the name given to a religion of China founded by Laotzu in the sixth century B.C.
Picture. A Taoist Priest, **4**, 226

Taormina is an ancient town on the eastern coast of Sicily where can be seen the ruins of ancient Greek occupation, **4**, 156

Tapajoz. A very large right bank tributary of the Amazon, **2**, 340; **4**, 316

Tape Machine. Name given to a telegraphic appliance which prints its messages on long paper tapes. These machines are found in stock exchange offices and elsewhere, **6**, 176
Picture: **6**, 182

Tapestry. A form of needlework often used at one time for covering walls and still used for ornamental purposes.
Picture. The Bayeux Tapestry, **9**, 342–3

Tapioca. A wholesome foodstuff derived from the root of the Cassava when heat has driven off the poison it contains, **1**, 350

Tapir, Malayan. An animal whose upper lip and nose are joined in the form of a trunk, the body being usually of two colours sharply divided.
Picture Mother and baby, **1**, 60

Taprobane. This was the name given to Ceylon by the Romans Its meaning is "the island of dusky leaves," **3**, 361

Tap-root. Name given to the main root or underground trunk of a tree which strikes deeply into the earth, though certain vegetables, *i.e.*, parsnips, are tap-rooted, **1**, 275

Tapuaenuku is the name of the highest mountain (9,467 ft.) in the Kaikoura Range in South Island, New Zealand
Picture. **3**, 259

Taranto is an ancient and historical seaport of Southern Italy standing on the Gulf of Taranto. It is also a large industrial town.
—it was the scene of a great blow struck by the Fleet Air Arm at the Italian Navy, **5**, 214

Tarantula. A large spider found in parts of Southern Europe. Its bite is most painful

Tarapaca is a deserted region of Chile where nitrates are obtained.
Picture. **4**, 326

Tarascon is a town of France, standing on the River Rhone. It is noted for its silk industry and for its ancient castle, **4**, 16

Tarawera is the name of a mountain in North Island, New Zealand. It erupted in 1886 and caused great destruction, **3**, 260

Tare. Another name for *Vetch* (*q.v.*).

Tariff is a list of duties placed on articles imported into a country, **9**, 356

Tarik. An Arab corsair, or pirate, who built a fortress on Gibraltar in

A.D. 711. After him, the rock was called Jebel Tarik, meaning the Hill of Tarik, and this is now Gibraltar, 4, 131

Tarpan. The wild horse of the Russian steppes. Its coat is a dull brown, 1, 92

Tarpon, The. Name given in the Royal Navy to the American fighter aeroplane Grumman Avenger, 5, 214

Tarpon. A giant fish of the herring family; it may weigh 200 lbs., 1, 212

Tarquinius, Lucius Priscus (616 579 B.C.). The fifth of the early kings of Rome, much loved for his wisdom and courage.

Tarquin the Proud, one of the kings of Ancient Rome, 2, 51, 78

Tarragon. A perennial herb, the leaves of which are used in salads.

Tarraleah Power Station is in Tasmania, Australia, and generates electricity by using the waters of Lake St Clair, 3, 213

Picture. 3, 237

Tarsier. A small lemur-like creature, about the size of a rat, found in Malaya. It lives entirely in trees and is no larger than our squirrel.

Tarsus. Once a Syrian city it is now one of the most thriving ports and towns of Asia Minor. It was the birthplace of St Paul

Tartars was the name given to bands of fierce mounted men who came originally from Mongolia. The Great Wall of China was built to keep out Tartars and Mongols, and both of these warlike peoples played an important part in the history of Russia, 4, 105

Tashkent is the ancient capital of the Uzbek Republic of the Soviet Union. It has a population of more than 585,000, 4, 112

Tasman, Abel Janszoon (1602 59). A Dutch sailor and navigator. When sent by his Government to seek out the supposed great South Land, he charted most of the south coast and discovered the island of Tasmania, to which his name has been given, 3, 200

—Tasman discovered the North Island of New Zealand, 3, 249

Tasman Glacier, one of the finest in the world, is found in the South Island of New Zealand, 3, 256

Pictures: The Great Tasman Glacier, 3, 253

Tasmania is an island state of the Commonwealth of Australia from whose mainland it is divided by Bass Strait. Named after its discoverer Tasman, it is famous for its fruit and agricultural produce whilst it possesses mineral wealth and hydro-electric power. The capital is Hobart, 3, 234 *et seq*

—its discovery by Tasman, 3, 200, 202

—its settlement, 3, 204

Pictures: Captain Cook reaches Tasmania, 2, 315

"White Coal" for Tasmania, 3, 237

Hobart and Mount Wellington, 3, 238

Photo-tone Supplement: Tasmania—Australia's Island State, 3, *between* 240 and 241

Pictorial Map: 3, 243

Tasmanian Wolf. See *Thylecine.*

Tasmanian Devil is the name given to a pouched animal of Tasmania. It is not unlike a badger and is most destructive to sheep, 3, 246

Photo-tone Supplement Wild Life in Australasia, 1, *between* 336 and 337

Tasman Peninsula is at the south east corner of Australia's island state of Tasmania.

Photo-tone Supplement Tasmania Australia's Island State, 3, *between* 240 and 241

Tassel Flower. Name given to the annual Cacalia on account of the shape of its blossoms.

Tata Steel Works are at Jamshedpur in the Bihar province of the Dominion of India. Indians claim that these works are the largest in the British Commonwealth, 3, 314

Pictures: The Tata Steel Works at Jamshedpur, 3, 313

Off to the Smelting House, 3, 314

Tate Gallery is the name given to a picture gallery at Millbank, London. The originals of some of the pictures appearing in these volumes are at the Tate Gallery.

Tate, Sir Henry, Bart (1819 99). A wealthy sugar merchant, he was devoted to the fine arts. He founded the Tate Gallery in London and gave to it his magnificent collection of pictures.

Tattoo means to mark (the skin) with designs in permanent colours.

Tattooing consists in pricking the skin with a needle and rubbing in colouring matter of some kind.

Once executed, tattooing cannot be removed. It originated among savage tribes and was adopted by white sailors, among whom it is still popular.

Tauber is the name of a river in Bavaria, Germany, on whose banks stands the old walled town of Rothenburg

Pictures. 4, 77 and 78

Tauchnitz, Karl Christoph (1761 1836). A German printer whose firm started the well-known Tauchnitz editions of English and American authors.

Taunton, standing on the River Tone, is the county town of Somerset. Its Grammar School, now known as King's College, was founded in 1552, and at this town Monmouth was proclaimed king (1685), 3, 56

Taupo is the name of the largest lake in New Zealand. It is in North Island, 3, 258

Taurus, the Bull. One of the Signs of the Zodiac (*q.v.*).

—name given to a Constellation of Stars, 8, 174

Tavistock. A market town of South Devon. It is a mining and quarrying centre, 3, 44

Tavy is a river of Devon rising on Dartmoor and flowing into the Tamar, 3, 51

Taw is a river of Devon flowing from Dartmoor to Bideford Bay, 3, 51

Tawny Owl. This variety of owl is common in the British Isles, and is the most frequently seen bird of the species. It is also known as the brown or wood owl, 1, 186

Tay. A river of Scotland, 118 miles in length. It passes through Loch Tay and is the river of Perth. At Dundee it is crossed by the Tay Bridge, 3, 114

Tay Bridge, spanning the Firth of Tay at Dundee, is upwards of two miles in length. It was built in 1888. A previous bridge was destroyed in a gale in 1879

Tay, Firth of. See *Firth of Tay.*

Tay, Loch. A lake of Perthshire, Scotland. It is about 14 miles in length.

Tbilisi, formerly known as Tiflis, is the capital of the Georgian Soviet Socialist republic of the Soviet Union and the chief town of Transcaucasia. It stands on the railway linking this part of the Soviet Union with Iran (Persia), 4, 203

Tchaikovsky, Peter Ilich (1840 93). Famous Russian musical composer. He wrote the "Pathetic" Symphony, 7, 187

T.D. means Territorial Decoration, a distinction bestowed upon Territorial officers.

Tea is prepared from the dried leaves of the tea plant, an evergreen shrub. The plant is grown in India, Ceylon, Assam, China and other parts. Teas from different countries are usually blended to form the tea of commerce, 3, 364, 4, 369

Pictures. On a Tea Estate, 3, 364

Tea for Britain and the World, 4, 357

Tea Plucking, 3, 357, 4, 358

Teak. A well-known tree native to parts of Africa and the East Indies. Its wood is very hard and durable. It is one of the woods grown in the hot, wet forests of Burma, 4, 220

Picture 4, 363

Teal. A web footed bird with a green spangle on its wings amidst brown plumage. The smallest member of the duck family

Teamster is the word used to describe the driver of a team of horses, oxen, mules, or camels

Picture 3, 218

Teasel. Name of a tall wild plant that produces its flowers in a prickly head. The leaves grow in such a way that their bases form cups which fill with rain water. (*p.h.*)

Teaser is the term applied to a machine for blending wool in the mills

Picture: 6, 360

Tea Tree. Found in New Zealand, it has white, pink, or red blossoms, 3, 262

Tedda was an old-time British chieftain

Teddington, Middlesex, is said to be named after him

Tedder, Lord (born 1890). Marshal of the R.A.F. Had a distinguished record during the 1939–45 war and as Deputy Chief Commander under General Eisenhower 1943 45 was largely responsible for the early success of the Normandy landings

Teddington, standing on the Thames, is a residential town of Middlesex and part of Greater London. Here is the National Physical Laboratory.

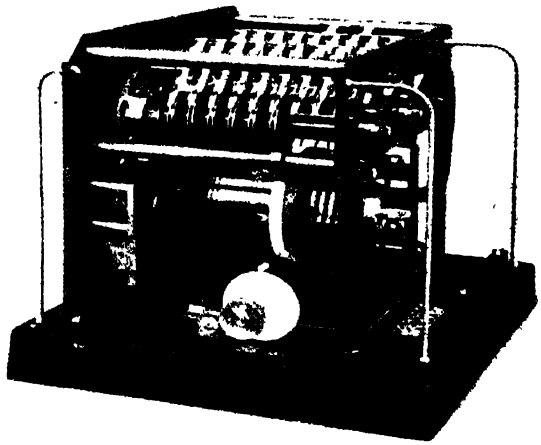
—Teddington Weir marks the point after which the Thames becomes tidal.

Tees is a river of the north which marks the boundary between County Durham and Yorkshire. Stockton and Middlesbrough are two important towns on its banks, 3, 80, 81

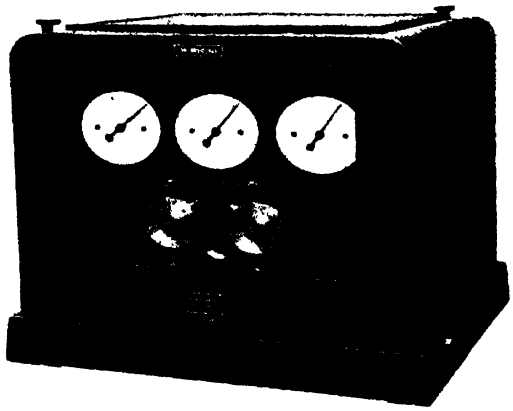
Teeth, the little "workmen" which prepare our food for digestion, fall into two main groups. The front

teeth are cutters, with which to slice off portions of food. Back teeth are grinders, for chewing the food, **8**, 220
—teeth of animals, **1**, 11
Tegucigalpa is the capital of the Central American republic of Honduras. Its name comes from an Indian word meaning " silver hills " and there are silver and gold mines in the vicinity, **4**, 303
Tehran, or Teheran, is the capital of Persia and contains buildings in both western and old Persian style. It occupies a north-central position in the country and has a population of nearly 700,000, **4**, 203
– the Allied leaders met here during the last war, **2**, 253
Tehuantepec, Isthmus of. This stretch of land bounded to the east by the Gulf of Mexico and on the west by the Pacific Ocean is the narrowest part of Mexico, **3**, 160
Teifi is a river of South Wales. It flows into Cardigan Bay and has a cloth-making industry along its banks, **3**, 102
Teign is a river of Devon rising on Dartmoor, **3**, 51
Teignmouth is a holiday resort on the coast of south Devon, **3**, 51
Te Kooti. The name of a Maori leader of the times when the Maoris were resisting the British settlement of New Zealand, **3**, 252
Te Kuiti is a township in the western central district of the North Island of New Zealand.
Photo-tone Supplement: New Zealand Scenes, **3**, *between* 256 and 257
Tel Aviv is the largest city in Palestine and has a population of over 183,000. It was in this city in May 1948 that the Jewish National Council proclaimed the State of Israel, **4**, 173, 183
Picture: **4**, 173
Telegram. Points to be observed in writing a telegram, **8**, 190
Telegraph, Electric. The first practical electrical telegraph was produced in 1837 when Cooke and Wheatstone in England brought out the needle telegraph, while Morse in America produced his electro-magnetic telegraph. Modern developments are described in *Messages and Pictures by Wire*, **6**, 174 *et seq.*
– first public telegraph opened, **2**, 216, 412
—when invented, **9**, 304
—first telegraphic message from Old World to New, **9**, 304
Pictures: In London's C.T.O., **6**, 174
Sending and Receiving Telegrams, **6**, 175
A Travelling Telegraph Office, **6**, 177
A Power House Under the Sea, **6**, 178
Teleprinters at the Derby, **6**, 179
The World's Largest Cable Ship, **6**, 180
" Tape " Machine, **6**, 182
Landing and Grappling for Cables, **6**, 183
Paying Out the Cable, **6**, 184
Miles of Submarine Cable in Store, **6**, 185
Telegraphing a Photograph, **6**, 186, 188
Grapnel at Work, **6**, 187, 188
Telephone. We owe this wonderful invention to Dr. Bell, a Scottish doctor who was a professor at Boston University, U.S.A., and who patented the first telephone in 1876. The methods by which the quick vibrations of the human voice are transmitted by electrical means are described in *The Telephone and How It Works*, **6**, 189 *et seq.*
See also *Bell, Alexander Graham.*
Pictures: A Submarine Telephone Cable, **6**, 189
Two Historic Telephones, **6**, 190
More Than Half a Century Old, **6**, 191
International Exchange, **6**, 192
The Hand-Microphone, **6**, 193
A Small Telephone Exchange, **6**, 194
Where Thousands of Lines Meet, **6**, 195
In an Automatic Exchange, **6**, 196-7
Dial of Automatic Telephone, **6**, 198
Telephotograph. A photograph taken with a lens of very long focus, or with a lens specially designed to give the effect of long focus and throw a large image.
Telephony, Wireless. See *Wireless Telephony.*
Teleprinter. An instrument similar to a typewriter in appearance and with a similar keyboard. It is electrically driven and has been adopted for general use by the Post Office for the sending of inland telegrams, **6**, 176
Pictures: Teleprinter in Use for Sending Telegrams, **6**, 175
Teleprinters at the Derby, **6**, 179
As the News Flows In, **9**, 211
Telescope. Name of an instrument by means of which we can see distant objects clearly. The first person to use a telescope in astronomy was Galileo. An astrographic telescope is one combined with a camera
Pictures Tower Telescope at Mount Wilson, **8**, 110
One of the World's Greatest Telescopes, **8**, 111
A Great Refractor, **8**, 113
For Photographing Stars, **8**, 115
Two of Galileo's Telescopes, **7**, 352
Telescopic Camera is a photographic camera with a telescope mounted in conjunction with the lens.
Picture: **8**, 124
Television. Name given to the system whereby scenes enacted at a distance can be reproduced by wireless on screens in the home. One of the earliest experimenters was J. L. Baird who gave the first practical demonstration of television in London in January 1920. The world's first public television service was given by the B.B.C. from Alexandra Palace, London, at the end of 1936. Television broadcasts were resumed in 1946 after being suspended during the war years. A second television station was opened by the B.B.C. at Sutton Coldfield in the Midlands in December 1949 and other stations have been erected at Holme Moss, Yorkshire, Kirk o' Shotts, Scotland, and Wenvoe, S. Wales. See *Television—the Magic Mirror*, **6**, 219 *et seq.*
—early transmission, **2**, 241
Pictures: The Magic Mirror at Work, **6**, 219
At Television Headquarters, **6**, 220
Test Match at Lord's Televised, **6**, 221
Ice Hockey Match Televised, **6**, 221
Televising the Lord Mayor's Show, **6**, 222
Cathode Ray Tube, **6**, 224
Television Men in Action, **6**, 225
Holme Moss Station, **6**, 226
Emitron Camera, **10**, 371
Telewriter. A device for sending and receiving messages. It records a message in the exact handwriting of the sender, **6**, 177
Telford, Thomas (1757–1834). Born in Dumfriesshire, he became engineer and architect to the Ellesmere Canal, linked the Mersey, the Dee and the Severn; bisected Scotland by the Caledonian Canal; built over a thousand miles of roadway and constructed the Menai Bridge. His last great work was St. Katherine's Docks, London, **3**, 102; **5**, 37, 46
Tell, William, a national hero of Switzerland, who is supposed to have existed in the early fourteenth century, **4**, 56; **9**, 325
Tempera, or distemper, was the material in which the old-time artists worked, **7**, 8
Temperate means moderate. England has a temperate climate, that is, one which is neither very hot nor very cold.
Tempering is the process of giving the right degree of hardness to steel. The article to be tempered is first polished, and then heated till it shows a certain colour, when it is cooled suddenly by being dipped into cold water or oil.
The colour changes as the heat rises, and the experienced eye can tell when the heat is correct for the hardness required.
Tempest. Name of a famous British low-winged fighter. It was designed by Mr. Sydney Camm
Tempio di Ercole. One of the many ruins along the Appian Way.
Picture: **5**, 35
Template. A pattern used for marking out wood or metal that has to be cut or bored. If one has to cut out a number of pieces of board of the same shape and size, it will probably save time to begin by making a template and to use it for marking out all the pieces, which will then agree exactly.
Temple Area of Jerusalem, or Haram-el-Sherif, is upon Mount Moriah to the east of the modern city and is supposed to be the site of the Great Temple of Solomon.
Picture: **4**, 183
Temple Bar was once the western gateway to the City of London. It was removed to Theobald's Park in 1878, **3**, 14
Temple, Inner and Middle. Two of the Inns of Court between Fleet Street and the Strand. The gateway in Fleet Street of the Inner Temple dates from 1610. The precincts of the Temple have many literary as well as legal associations.
Temple of Athene. There is a temple of this name in the ancient citadel of Lindos on the eastern Mediterranean island of Rhodes.
Picture: **4**, 161
Temple of Diana is a famous Roman ruin to be seen at Nîmes, in France, **4**, 14

TIME SIGNALS AND TELEVISION

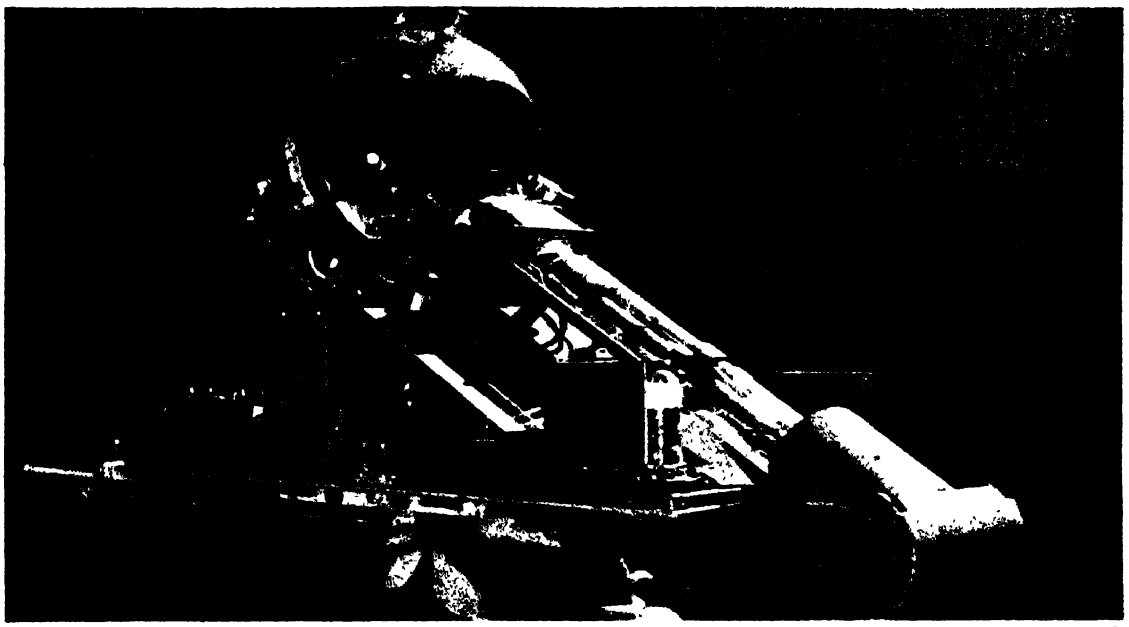


We all know the " Six Pips " *Time Signal* (see p. 375) broadcast by the B.B.C. For more than 25 years these pips came from the clock which can be seen on page 224 of Volume IX.



Muirhead & Co Ltd

The old clock was replaced towards the end of 1949 by the new transmitting motors, seen above, operating from standard quartz clocks at the Observatory time station



B.B.C.

The real secrets of *Television* (see p. 370) are revealed in this photograph of the " Emitron " Television Camera, from which the cover has been removed to show the highly-complicated " works " which make the modern marvel of Television possible. An explanation of the principles on which the camera works is given in Volume VI.

Temple of Diana, at Ephesus, was one of the Seven Wonders of the Ancient World, 7, 292
Picture: 7, 287

Temple of El Khaznch is a tomb hewn out of the living rock 2,000 years ago at Petra, in Trans-Jordan.
Picture 4, 189

Temple of Philæ is one of the sights of the Nile, to be seen near Assuan, 4, 197

Temple of the Dawn. See *Wat Arun Rajavararam.*

Temple of Theseus. This marble temple is one of the best-preserved of the ancient Greek buildings. It was built to receive the remains of Theseus, one of the great Greek heroes.
Picture: 9, 17

Temple of the Tooth is the name of a famous Buddhist temple at Kandy, the old capital of Ceylon, 3, 366
Picture. The Temple of the Tooth, 3, 365

Tenby is a holiday resort of Pembrokeshire, on Carmarthen Bay.

Tench. Fresh water fish of the carp family found in many rivers of Europe, including Britain. It attains a length of 18 in. with a weight of 3 to 4 lb. It prefers still, deep waters with muddy bottoms where it can lie lazily.
Special Colour Supplement: British Fresh Water Fishes (Plate 3), 8, *between* 256 and 257

Tenedos is an island of the Ægean Sea near the mouth of the Dardanelles.

Tenerife is one of the *Canary Islands* (*q.v.*). It trades in fruit and market garden produce, Santa Cruz being the capital. Elpico (the Peak) was probably the mountain seen by Columbus and his sailors, 2, 276

Tennessee. A river of the U.S.A. which rises in the Alleghany Mountains and flows into the Mississippi. On account of its terrible floods it was known as the "worst river," but it is now controlled and harnessed by the Tennessee Valley Authority, 4, 293

Tennessee is one of the south-central States of the U.S.A. It grows farm crops and raises stock besides being a centre for growing cotton and tobacco. The capital is Nashville.
Pictorial Map. 4, 291

Tennessee Valley Authority was set up in the U.S.A. in 1933 to control and harness the flow of the Tennessee River, 4, 293

Tenniel, Sir John (1820–1914) Famous British artist and leading cartoonist of *Punch* for over 50 years. He illustrated *Alice's Adventures in Wonderland.*
Pictures: 7, 220, 221

Tennyson, Alfred (1809–92). One of the greatest of English poets. He became Poet Laureate in 1850, 2, 221; 7, 146. (*p.h.*)
Poems: The Beggar Maid, 9, 99
The Owl, 9, 104
Pictures: On the Road to Camelot, 7, 146
The Lady of Shalott, 7, 147
The Lily Maid of Astolat, 7, 148
The Poet-Peer, 7, 149

Tenrecs are small hedgehog-like animals found in Madagascar.

Tenterden is in Kent. Here the house called Smallhythe, where the famous actress Ellen Terry lived, is being preserved for the nation by the National Trust, 3, 415

Ten-week Stocks. See *Stocks, Ten-week.*

Terai. A jungle region at the foot of the Himalayas, chiefly in the United Provinces of the Dominion of India, 3, 348

Teredo. The ship-worm, a creature about 6 in. in length. It bores into the timber of ships, break-waters and mooring posts, 2, 304

Terminal. An end of an electric circuit, generally provided with a clamping device to which wires may be attached.

Terminus. A word meaning a boundary or extremity of a thing We use it chiefly of a place at which a railway, tram-line or bus route ends, and, in the case of a railway, of the station there.
The great railway termini (plural) of London are Paddington, Marylebone, Euston, St. Pancras, King's Cross, Liverpool Street, London Bridge, Charing Cross, Victoria and Waterloo.

Termite. Sometimes known as White Ants but do not in fact belong to the same family. They are found almost entirely in tropical countries. They feed largely on wood and in consequence cause very considerable damage.

Tern. Name given to a family of sea-birds related to the gulls. The terns have long wings, forked tails and short legs and live mainly on fish Five species breed in Britain, common tern, Arctic tern, little tern, roseate tern and Sandwich tern, 1, 166

Terra Australis Incognita. These Latin words mean "the Unknown Land of the South" and were the name used by old explorers and map-makers to describe the undiscovered continent of Australia, 3, 199

Terra Cotta comes from two Italian words meaning "burnt earth" Bricks are a crude form of terra cotta, but a composition made of clay and sand, afterwards burned, is used for vases, slabs and other artistic work.

Terra Nova was the name of Captain Scott's famous ship in the 1910 Antarctic Expedition, 2, 374
Picture: 2, 368

Terrapin. A water-loving member of the tortoise family. It has webbed feet and is found only in warm countries.

Terra Rossa is the name given to the rich, red soil of parts of Brazil which yields the best coffee, 4, 312

Terrestrial. Belong to the earth; living on the earth. The terrestrial atmosphere is that which encloses this globe of ours.

Terrible Lizard. See *Iguanodon.*

Terrier is the name given to a family of dogs. There are Irish, Fox, Manchester, Yorkshire, Skye, Wire-haired and several other terriers.
Picture: Wire-haired Terrier, 10, 111

Territorial Army. Beginning in 1907 as the Territorials, this force absorbed the Volunteers and Yeomanry. In normal times members of this Army are civilians who enlist to train in their spare time in military drill, etc., so that they may form a valuable line of defence in the event of war.

Territorial Waters is a term applied to the sea within three miles of a country's coast-line. It belongs to that country and according to international law its neutrality must not be infringed.

Terror. One of Ross's ships in the English Antarctic Expedition (1840–42), 2, 366

Terry, Dame Ellen (1848–1928). One of the greatest of English actresses, she was long associated with Sir Henry Irving. She received many honours, including the Grand Cross of the Order of the British Empire, 3, 415
Picture As Lady Macbeth, 7, 133

Test. A river of Hampshire which flows into Southampton Water, 3, 36

Testa. See *Tista*

Tetuan is the chief town of the Spanish zone of Morocco, 4, 166

Teutonic Order of Knights. This Order was founded in 1190, during the Third Crusade and was active in winning territories in the Baltic. Torun in Poland was among the cities founded by these German knights whose greatest defeat in battle was at Lake Peipus in 1242 when they were routed by the Russians under Alexander Nevsky.
Picture 4, 123

Tewhatewha is the name Maoris give to their long-handled fighting axes, 3, 260

Tewkesbury. An ancient town of Gloucestershire, standing on the River Avon It is famous for its Abbey Here, during the Wars of the Roses, was fought the Battle of Tewkesbury (1471), 2, 135

Texas is the largest State of the U.S.A. extending to the Gulf of Mexico Its main interests are cotton and stock-raising, though it produces much oil. The capital is Austin.
Pictorial Map. 4, 290

Textiles is the name given to materials or products that can be woven, *e.g.*, cotton, flax, wool, silk, etc.

Thackeray, William Makepeace (1811–63). In his younger days a journalist, he became a great novelist. *Vanity Fair, The Virginians* and *The Newcomes* are among his best-known works, 2, 221, 411; 7, 212. (*p.h.*)

Thailand. See *Siam.*

Thales (*c.* 640–546 B.C.). A Greek philosopher. He was a founder of geometry and of astronomy, 7, 339
Picture. 7, 341

Thame. A small agricultural town of Oxfordshire. The name is also given to a river of the same county which forms a tributary to the Thames.

Thames. England's longest river on which London stands. Its headstreams rise in the Cotswolds and unite near Lechlade. It has a number of tributaries and the river ends at the Nore. Approximately it is about 210 miles in length. Tidal waters begin at Teddington and from there to its mouth it is controlled by the Port of London Authority. Upstream above Teddington the Thames Conservancy Board has control.
—the Thames Valley, 1, 2 *et seq.*

—London and the Thames Basin, 3, 7 *et seq.*
—its source, 9, 309
See also *A Visit to London's Docks*, 8, 87 *et seq.*
Pictures. London's River Today, 1, In Prehistoric Times, 1, 6
In the Days of the Romans, 1, 7
Waterloo Bridge, 3, 8
Tower Bridge, 3, 9
The Thames at Oxford, 3, 29
Cliveden Reach, 3, 407
Near Twickenham (18th cent.), 7, 76
A Barge in the Lower Reaches, 8, 100

Thane was a name used in olden times to describe a class of people not of the nobility and yet superior to the common folk. Macbeth is said to have been thane of Glamis, in Scotland, 2, 246

Thanet. A district of Kent It is called the Isle of Thanet because the River Stour separates it from the other parts of the county
Hengist and Horsa off Thanet, 2, 82

Thar or Indian Desert is the name given to a great tract of country to the north-west of Rajputana, 3, 341

Thatching is the art of putting a roof or covering on to a hay rick or corn stack. The thatch is formed of straw, which is held down by spars and strings In many parts of the country the roofs of dwelling houses and farm outlings are thatched, 6, 387, 9, 386
Pictures: Learning an Old-World Art, 6, 392
In the Stack Yard, 6, 394
Village Craftsmen, 3, 54; 9, 385

Theatre. A place or building in which dramatic performances are given Originally they were open spaces and even in Shakespeare's time were partially open at the top
Picture: Ballet Takes the Stage, 10, 29
Photo-tone Supplement The Boy Through the Ages, 8, *between* 368 and 369

Thebes, on the River Nile, was once capital of the upper part of Egypt. Its ruins may be seen near the town of Luxor, 4, 196
Pictures 4, 193
A Sportsman (mural painting from Thebes), 9, 3

Themis is the faintest of the satellites of the planet Saturn, 8, 155

Themistocles (514–449 B.C.). A Greek general. He caused the people of Athens to leave their city during the Persian invasion and commanded the Greek fleet in the straits of Salamis, 2, 32; 4, 157

Theobalds is the name of a famous mansion and park in Hertfordshire. Here old Temple Bar (from London) was re-erected, 7, 320

Theodolite. An instrument used by surveyors for the measurement of horizontal and vertical angles. (*p.h.*)

Theodosia. An ancient and historical seaport. It stands on the Black Sea, in the Crimea, and is part of the Soviet Union.

Theodosian Walls are part of the old fortifications of Istanbul (Constantinople) and were built by the Emperor Theodosius II more than 1,500 years ago.
Picture: 4, 162

Theory. A view put forward as to the explanation of something. Modern chemical science is built up on what is called the atomic theory of matter, which supposes matter to be made up of atoms.

Thera. Another name for the Ægean island of Santorin and the name of the chief town of that island, 4, 164 *et seq*

There Was An Old Woman. A Poem by Anon., 9, 108

Therm. The British thermal unit (B Th U for short), or unit of heat. It is the amount of heat needed to raise the temperature of a pound of water through 1° Fahrenheit
The gas therm is 100,000 standard thermal units The price of gas is now based on its heating value, and a customer is charged so much per gas therm in the gas consumed by him

Thermal is a word meaning heat, thermal springs being natural springs of hot water The *Thermal Region* of New Zealand is in the North Island, 3, 258

Thermionic. Releasing particles by heat The word is used of wireless valves, in which a filament is heated to release particles of electricity, called electrons, and allow them to cross a gap to a small plate connected with a battery

Thermionic Valve, or vacuum tube A device that sends out a perfect carrier wave for wireless telephony, 6, 216

Thermometer. An instrument for measuring heat and cold, named after *thermos*, a Greek word meaning heat, 5, 6
Fahrenheit thermometers, invented 1724, show 32° as freezing point, in centigrade thermometers freezing point is 0
Picture The Stevenson Screen, 5, 11
Barometer and Thermometer, 5, 15
"Six's" Thermometer, 5, 15

Thermopylæ, Battle of (191 B.C.) In this battle, the Greeks were defeated by the Romans, 2, 462

Thermopylæ, Pass of. A narrow pass in the mountains of Greece. It was defended by Leonidas, King of the Spartans, against Xerxes, 480 B.C., 2, 27
Pictures The Pass of Thermopylæ, 2, 29
The Spartans' Last Stand, 2, 30

Thermos Flask. A glass vessel with a double wall, the space between the two walls being a vacuum. This maintains the temperature of the contents of the flask, whether hot or cold.
Picture: 5, 88

Thessalon is the name of a river of Ontario, Canada, much used by lumbermen for transporting logs.
Picture: 3, 169

Thessaly is the name of an eastern district of Greece covering some five thousand square miles In ancient times it was famous for its fine horses, 2, 40; 4, 158
Picture: Two Fishermen of Thessaly, 4, 156

Thetford. (1) A market and small industrial town of Norfolk that was once the capital of East Anglia.
(2) An important asbestos-mining centre of Ontario, Canada, 4, 386

Thieves' Islands is a translation of **Ladrone Islands,** *ladrone* in Spanish meaning a thief, 2, 284
See *Marianas.*

Thioux Canal links the lake of Annecy to the Fier which is a tributary of the French river Rhône.
Picture: 4, 16

Thirlmere is one of the English Lakes. It supplies water to the city of Manchester, 3, 88; 6, 2 0

Thirsk. A town of the North Riding of Yorkshire, standing on the River Cod.

Thirty Years War (1618–48) was a religious conflict in which France, Sweden, Denmark, and the Holy Roman Empire were involved It was brought to an end by the Treaty of Westphalia which marked the beginning of a period of French ascendancy, 2, 407, 4, 56
Picture 4, 77

Thistle. Name given to a large group of plants which form rosettes of spiny leaves in their first year and develop prickly stems in the second year The small red or purple florets are tubular.
The Carline Thistle is a small plant about 1 ft high The Sow Thistle (*q.v.*) has yellow flower-heads and is not strictly a thistle. The field thistle which has thick underground creeping roots is a serious pest on agricultural land
—the Thistle is the national emblem of Scotland, 9, 320
Special Colour Supplement 1, *between* 304 and 305 (Plate 3)

Thistledown is the name given to the tuft of silky hairs that form on the flowers of thistles, 1, 374

Thistle, Marsh. See *Marsh Thistle.*

Thomas à Kempis (1380–1471). A famous monk of German origin. He wrote a wonderful book, *Imitatio Christi*, which has been translated into many languages

Thomas, Edward (1878–1917) British poet and nature writer He wrote the biographies of Richard Jefferies, the naturalist, and Swinburne, the poet. Killed on active service in 1917.

Thomas, George Holt (1869–1929). A famous British aviation pioneer, he did much to help early efforts of experimenters and founded a company for the manufacture of British aeroplanes. He was one of the real founders of British air transport as we know it today.

Thompson, Francis (1859–1907). An English poet, he wrote *The Hound of Heaven*, 7, 156

Thomson, James (1700–48). A Scotsman, he wrote *The Seasons*, giving in verse descriptions of rural life, 7, 139

Thomson, James (1834–82), Scottish poet. He wrote *The City of Dreadful Night*

Thomson, Sir Charles Wyville (1830–82). A brilliant Scottish naturalist, he was on board H.M.S. *Challenger* during her voyage of exploration. He discovered many new varieties of deep-sea fishes.

Thomson, Sir Joseph John (1856–1940). A British scientist, he added much to the scientist's knowledge of electricity, 7, 409

Thomson, William. See *Kelvin, Lord.*

Thor, in the folklore of Norway, was

the god of thunder. He had a red beard, 4, 36

Thoracic means something relating, or belonging, to the thorax, or upper part of the body.

Thor Among the Giants. A Tale from the Norse, 5, 333

Thoreau, Henry David (1817–62). An American scholar and friend of Emerson, he is best remembered for his book *Walden*, 7, 232

Thorharson, John. A priest of Iceland who wrote of the early voyages of the Norsemen, 2, 273

Thorium is a rare metallic element (symbol Th). It gives out rays in the same manner as radium. Pure thorium is a grey powder, of about the same weight as lead.
Oxide of thorium is very efficient in converting heat into light, and on this account is used for the mantles of incandescent gas mantles.

Thorn. See *Torun.*

Thorndike, Dame Sybil (born 1882) Noted British actress who has appeared in many plays including *St. Joan* in which she played the part of Joan of Arc, *Granite*, etc. Has received many honours including LL.D. degree from Manchester University and became D.B.E. in June 1931.

Thornycroft, Sir John Isaac (1843–1928). A naval architect, he built the first torpedo boat for the Royal Navy in 1877.

Thornhill, Sir James. A favourite artist of Queen Anne. He gave painting lessons to Hogarth, 7, 75

Thorpe Ness is a point on the coast of East Anglia just above Aldeburgh. Northwards there are cliffs, but southwards the shore is marshy, 3, 60

Thorwaldsen, Bertol (1770–1844). Danish sculptor who became friendly with Canova. He was a great worker and among his famous marbles are "Cupid and Psyche" and "The Triumph of Alexander," 4, 47

Thrace is the name of the extreme north-eastern district of Greece which is a tobacco-growing area, 4, 158

Three Brass Balls is the sign of a pawnbroker, dating back some centuries, 9, 320

Three Kings is the name of a group of islands off the northern tip of North Island, New Zealand. They belong to the Dominion, 3, 274

Three Rivers is a city of Quebec, a centre for timber, grain and other products, 3, 195

Three Towns, The. The name given in the West of England to Plymouth, Devonport and Stonehouse, 3, 44; 9, 312

Threshing means to get the corn from the ear and at the same time to dispose of weed seed, husks and other refuse. The threshing machine through spouts feeds the grain director into bags whilst the straw is taken away to be stacked or made into bales, 6, 392
Picture: 6, 391

Thrift. (1) A familiar wild plant of the seashore. The leaves grow in tufts and the flowers are pink.
(2) Popular name for *Armeria*, a perennial plant much used in our gardens for edging and in rockeries.

Throstle. Name sometimes given to the song thrush (*q.v.*).

Thrower is the name given to the operative who manipulates a potter's wheel in a china works, 9, 195

Throwing Stick is a weapon used by natives of Australia. It is like a spear with a lever to lengthen its flight, 3, 226

Throwing the Hammer is an event in the Highland Games and at sporting fixtures in many parts of the world.
Picture: 3, 132 and 133

Thrush. Family of song-birds known as the *Turdidæ*. In this country we have the song-thrush (yellowish throat, speckled with dark brown spots); the missel thrush; blackbird; fieldfare, and others. The blackbird is a member of the thrush family.
Picture: 1, 163
Special Colour Supplement: British Wild Birds, 1, *between* 160 and 161 (Plate 1)

Thrush, Missel or Mistle. See *Mistle Thrush.*

Thrush's Nest, The. A Poem by John Clare, 9, 96

Thucydides (*c.* 460–400 B.C.). One of the greatest of Greek historians, 2, 402

Thunder is caused primarily by a discharge of electricity from the clouds, 5, 17, 25; 9, 350-51
Picture: Thunder Threatened, 5, 10

Thunder-Lizard. Another name for the Brontosaurus, a prehistoric animal of giant proportions, 1, 17
Pictures: 1, 24–25, 36

Thunder of the Waters. Term applied by the Indians to Niagara Falls, 5, 63

Thuringia. A state of central Germany of which the chief feature is the Thuringian Forest, a wooded mountain range running south-east from Eisenach for about seventy miles.

Thursday Island is found in the Torres Strait, off Queensland, Australia. It is a centre of pearl-fishing.

Thurso is a town and seaport of the Scotch county of Caithness.

Thwaite. A village of Swaledale in the North Riding of Yorkshire.
Picture: 3, 81

Thylacine. A dog-like animal also known as the Tasmanian Wolf; the female is pouched like a kangaroo. The body of the creature is striped with black bands, hence its other name "Zebra Wolf."

Thyme is a common garden herb, the variety Lemon Thyme being generally grown.

Thyme, Water. See *Water Thyme.*

Thyme, Wild. See *Wild Thyme.*

Thyroid is the name of the gland in front of the throat which plays an important part in bodily health. You can feel the gland moving up and down when you swallow, 8, 231

Tiber. A river of Italy. It flows through the city of Rome.
—Romulus and Remus thrown into the river, 2, 47
—Horatius throws himself into the Tiber, 2, 54
Photo-tone Supplement: Land of the Eternal City, 4, *between* 112 and 113

Tiberius, Claudius Nero (42 B.C.–A.D. 37). He succeeded Augustus as Roman Emperor, 4, 158

Tibet is a large and mountainous country between India and China. It includes part of the Himalayas and its estimated population is about 3 million. The country is ruled by a Dalai Lama and his *Kashag* (Council) of 4 ministers. The capital is Lhasa. Tibetans are mainly herdsmen and there are many monasteries in their remote land which largely holds itself aloof from the world, 2, 389; 3, 352; 4, 238
Pictures: The North Face of Mount Everest, 2, 389
The Highest Camp in the Universe, 2, 391
A Camp Amidst the Snows, 2, 391
In the Land of the Lamas, 3, 353
The Fortress Town of Gyantse, 4, 232
The Temple of Haiden, 4, 232
In Red Idol Gorge, 4, 233

Ticino. A canton of southern Switzerland through which the river of the same name flows, 4, 64

Tick. Name given to creatures of the mite family. Many of them prey upon animals, such as sheep and dogs.

Tide-end-Town. Name given to Teddington, Middlesex, because the Thames ceases to be tidal at Teddington Weir

Tides. The regular rise and fall of ocean waters due to the gravitational forces of the moon and sun See *The Mystery of the Tides*, 5, 27 *et seq.*; 9, 307
Pictures A Rough Sea off the English Coast, 5, 27
The Haining "Bore" in China, 5, 29
A High Tide, 5, 29
Fury in the Bay of Biscay, 5, 30
The Severn Bore, 5, 31
The Incoming Tide, 5, 32
Evening Tide at Gainsborough, 5, 33
Like a Corrugated Sheet, 5, 34

Tides, Double. Along a stretch of coast including Southampton there are two high and two low tides a day, 5, 31

T'ien T'an is a Chinese name meaning "Altar of Heaven" and is given to a part of the city of Peiping (Pekin) where the Hall of Prayer stands.
Picture: 4, 239

Tientsin is a large industrial and commercial centre of the Hopei province of China. It is also the port for the old capital of Peiping and a water ways communications centre where five rivers meet, 4, 241, 242

Tiergarten is the name of a famous thoroughfare of Berlin, the traditional capital of Germany. The name actually means "deer-park" and refers to the gardens which extended on either side of the Charlottenburger Chaussee for about two miles. *Picture:* 4, 86

Tierra del Fuego is an island forming the extreme southerly tip of South America from which it is separated by the Magellan Strait. It belongs partly to Chile and partly to Argentina, 2, 285, 343 *et seq.*; 4, 320
Picture: 4, 335

Tiflis. See *Tbilisi.*

Tiger. (*Fem.* Tigress.) One of the great wild cats. It is found in all parts of Asia and may weigh between 400 and 500 lb., 1, 47. (*p.h.*)
Pictures: 1, 48; 10, 415

Tiger Beetle. A coloured beetle with

long legs and a large jaw. One variety is bright green.

Tiger Hill is an eminence at Soochow, China, surmounted by a famous pagoda.
Picture: **4**, 241

Tiger Hunt. How tigers are hunted and trapped, **1**, 48

Tiger Lilies bear orange-coloured flowers with brown spots. They are known as *Lilium tigrinum*

Tiger Moth. A variety of moth including different kinds, such as the Garden Tiger, the Ruby Tiger and so on, **8**, 282
Picture. **8**, 282
Special Colour Supplement: British Moths, **8**, *between* 288 and 289

Tiger, Sabre-toothed, the most ferocious of prehistoric cats, **1**, 33
Picture: **1**, 34

Tiger Shark. Related to the man-eating blue shark, this fish may be 25 ft. in length.
Picture. **1**, 212

Tiger's Hill is the name of a famous beauty spot near Darjeeling, India, from which the Himalayas can be seen, **3**, 348

Tiger, Siberian. See *Siberian Tiger.*

Tigris is the name of a great river of Iraq, or Mesopotamia. It joins with the Euphrates It is one of the great rivers of history and is mentioned in Genesis ii 14, as the River Hiddekel, **4**, 199; **5**, 73, **9**, 11

Tikitere is a valley about ten miles from Rotorua, in New Zealand. Here the very earth is hot and there is boiling water just below the surface, **3**, 260

Tilburg. A linen manufacturing town of southern Holland, **4**, 31

Tilbury. A town and riverport of Essex, on the Thames. It has very extensive docks belonging to the Port of London Authority and can accommodate the largest vessels.
– here Queen Elizabeth reviewed her troops, **2**, 146, **3**, 25

Tilbury Docks, though outside London, come under the Port of London Authority, **8**, 93, 101
Pictures: Nearest to the Sea, **8**, 90
In the Dry Dock at Tilbury, **8**, 95

Tiller. A bar or lever with which a rudder is moved in steering. A rowing boat's tiller is merely a removable wooden handle, fitting into a square hole in the rudder's head, or a crossbar to which steering handropes are attached.

Tilly, Johann Tzerclaes, Count (1559–1632). A famous soldier who, from being an ordinary pikeman, rose to the rank of Marshal and the position of commander of the armies of the Catholic League during the Thirty Years War.
Picture: **4**, 77

Tilsit, Peace of (1807) was made between Tsar Alexander of Russia and Napoleon, and between Napoleon and Prussia. Prussia was partitioned and Alexander promised to help Napoleon against England, **2**, 201

Timber, the product of trees, is used for house building, furniture making, pit props in mines, boat building, wood pulp for paper making, and even for artificial silk, **1**, 317; **9**, 373–74
See *Tree.*

Timber Wolf. Wild type of grey wolf found in America.
Picture: Young Timber Wolf, **1**, 59

Timbuctoo is a town of the French Sudan and a great centre for trade. It was visited by the fourteenth-century traveller Ibn Batuta, **2**, 272

Time is reckoned as follows:—

60 seconds . .	1 minute
60 minutes . .	1 hour
24 hours . .	1 day
7 days . .	1 week
13 weeks . .	1 quarter
52 weeks and 1 day, or	
365 days .	1 ordinary year
366 days .	1 leap year

Times Square is in New York, U.S.A and is to that city what Piccadilly Circus is to London.
Picture **4**, 272
Photo-tone Supplement. From New York to Hollywood, **4**, *between* 272 and 273

Time-Signals are sent out from Greenwich Observatory all over the world every day, **9**, 302
Pictures **9**, 224; **10**, 371

Times, The, is the name of Britain's most famous and influential daily newspaper. The paper was established under the title of *The Daily Universal Register* in 1785, the name being changed to *The Times* in 1788. The control of the journal is now governed by a trust, **2**, 410, **9**, 209

Timgad. One of the finest ruined cities of the old Roman Empire. It stands near the Algerian port of Philippeville, **4**, 166

Timmins, is in the "Canadian Shield" country of Ontario. Originally a gold camp, mines like the Porcupine and the Hollinger have caused it to grow into an important mining centre, **3**, 166

Timor is a large island of the Malay Archipelago. It belongs partly to the Portuguese and partly to the Dutch.

Timpani is the name given to the kettle-drums (*q.v.*) of an orchestra

Tin is one of the metallic elements (symbol Sn). It has been known to man since prehistoric times and is used in the manufacture of tin-plate, pewter, bronze, etc. The ore is found in Cornwall, in the East Indies, in several parts of Europe, Australia, Nigeria, Bolivia and Mexico. The chief source of supply to-day is Malaya. In the latter country, it is mined by two methods: (1) alluvial tin is obtained by washing the ore out of the aluvium (silt brought down by the rivers); (2) lode-mining, which is mining for the actual ore, **3**, 103
tin mines in Cornwall and Devon, **3**, 44
See also *Tin and Tin Plate,* **6**, 125 *et seq.*
Pictures: **6**, 125–130

Tin Boxes, as they are called, are made from rolled iron or mild steel coated with tin.

Tine. One of the spikes of garden digging forks and hand-forks; often wrongly called prong, **8**, 273

Tin Islands. This was the name given to the Scilly Islands and Cornwall by the Phœnicians, **2**, 402
Picture: **4**, 338

Tin Soldier, The Hardy. A Fairy Story, **5**, 314

Tintagel is a small town on the north coast of Cornwall. Here is Tintagel Castle, associated in legend with King Arthur, **3**, 46
Picture: **3**, 46

Tintern Abbey, the ruins of which are to be found near Chepstow, was founded in 1131, **3**, 75
Picture: **3**, 76

Tintoretto, Jacopo (1518–94) A Venetian pupil of the artist Titian, he became one of the greatest painters of his time Most of his subjects were of a religious nature, **7**, 30
Picture: **7**, 30

Tipperary is a county of Eire in the Province of Munster Its principal river is the Shannon, and its interests are mainly those of agriculture.
Tipperary is the county town and a market for farm produce, **3**, 154
Picture. The Rock of Cashel, **3**, 151

Tippoo Tip was a notorious African slave-trader, **2**, 336

Tiptoe's Magic Paint. A Tale for Nursery Folk, **5**, 301

Tipton is an industrial town of Staffordshire

Tiptree, Essex, is a noted orchard centre with important jam factories and vegetable canneries, **3**, 62

Tirana is the capital of Albania, the little country on the eastern shore of the Adriatic Sea, **4**, 156

Tirpitz, Alfred von (1849–1930). German admiral who was largely responsible for the U-boat campaign in the war of 1914–18, **2**, 233

Tirthankars are holy teachers of the Jain religion in India, **3**, 343

Tisbury, in Wiltshire, has a fine old tithe barn in which the produce paid by farmers to the Church used to be stored.
Picture: **3**, 41

Tissue is the name we give to the material of which our bodies are formed. We have muscle tissue, bone tissue, etc., all tissue being formed of cells, **8**, 209

Tista is the name of a famous river of that part of Bengal which is now in Pakistan, **3**, 348

Tit. See *Titmouse.*

Titan, about the size of Mercury, is the largest of the satellites of Saturn, **8**, 155

Titanic. Name of a White Star liner of 46,000 tons which struck an iceberg on her maiden voyage. She foundered with heavy loss of life during the night April 14th–15th, 1912, **2**, 232, 412

Titanium. An element (symbol Ti). A hard metal resembling iron, the oxide is used in the manufacture of paint, **4**, 356, 372

Titanothere. An extinct animal resembling a rhinoceros.
Colour Plate: **1**, *facing* 37

Tithe Commutation Act (1836) abolished the old and clumsy way of collecting tithes in produce and laid down that a sum called a tithe rent-charge should be paid instead, this sum to vary from year to year according to the price of corn, **3**, 41

Tithes are payments made by the

owners of land in a parish to the rector, **9**, 356
Picture: Inside an Ancient Tithe Barn, **3**, 41
Photo-tone Supplement. The Boy Through the Ages (Tithe Barn), **8**, *between* 368 and 369

Titian (1477-1576). The greatest painter of the Venetian school, his pictures are remarkable for their splendid colouring and perfect drawing, **7**, 24
Picture **7**, 27

Titicaca is a large lake of South America, some 12,000 ft. above sea level, **4**, 326

Titlark. Name sometimes given to the *Meadow Pipit* (*q.v.*).

Titmouse. Name given to a family of birds, generally known as Tits, of which seven species are common in Britain. These are the Bearded, Crested, Blue, Coal (or Cole), Great, Marsh and Long-tailed Tits. All are insect-eaters. The blue tit is probably the best-known of all and is commonly called the tomtit, **8**, 323
Picture. **8**, 322
Colour Plate Three Members of the Titmouse Family, **1**, *facing* 196
Special Colour Supplement: British Wild Birds, **1**, *between* 160 and 161 (Plates 2 and 3)

Titograd. A town of Yugoslavia and the capital of the federal unit (province) of Montenegro. It was formerly known as Cetinje and was the capital of the old Kings of Montenegro whose small palace there can still be seen, **4**, 94, 156

Titus, Roman Emperor (A.D. 39-81). He succeeded Vespasian as Emperor in A.D. 79. But before this he had waged war against the Jews and had captured Jerusalem, a triumph commemorated in the Arch of Titus erected by his successor Domitian.
Picture: **4**, 141

Tiverton is a town of Devon, famous for Blundell's school for boys

T.N.T. is the abbreviation for Trinitrotoluene, one of the most important high explosives. It was largely used in the Great War of 1914-18 and in the World War of 1939-45, **7**, 379

Toad. An amphibian (*q.v.*) related to the frog, but differs in having a broader head, shorter limbs, and a dry, pimply skin. The tadpoles of the toad are smaller than those of the frog. Two kinds of toad are common in Britain: the common toad and the natterjack (*q.v.*), **1**, 156, 157
Pictures: One of the Gardener's Friends, **1**, 158
Giant Toad and Common Toad, **1**, 159

Toad-Flax. A wild plant that creeps over garden walls. Ivy-like leaves and lilac flowers with yellow centres, **1**, 338
Colour Plate: **1**, *between* 304 and 305 (Plate 2)

Tobacco Plant, as grown in the garden for decoration. See *Nicotiana.*

Tobacco Plantations are found in several different parts of the world. Tobacco is grown in Southern Rhodesia, in Greece, and in Turkey, for example. But the largest tobacco plantations are found in the southern states of the U.S.A., **4**, 293, 397
Pictures: Where Tobacco Grows, **4**, 288
Watering Tobacco Seed-beds, **4**, 267
Jamaican Tobacco, **4**, 387

Tobago is a British island in the West Indies famous for its cocoa. It is the original of the island described in "Robinson Crusoe," **3**, 398

Tobermory. Seaport standing on bay of the same name in Argyllshire, Scotland.
After the defeat of the Armada in 1588 a Spanish galleon sank in Tobermory Bay about 80 yards from shore. Various attempts have been made up to 1950 to recover its reputed treasure and certain valuables such as silver goblets, dishes and coins have been obtained, **8**, 54

Toboggan is the name given to a sledge, often with the front curved upwards, used on snowy slopes. Toboggans are popular in Canada and other winter sports countries.
Picture: **3**, 186

Tocantins is the name of a river of Brazil, some 1,500 miles in length. It was explored by the naturalist, Bates, **2**, 339

Toc H was originally a rest house for soldiers at Poperinghe in Belgium, opened in 1915 by the Rev. P. B. Clayton. After the war it developed into a big Christian brotherhood of ex-service men.

Tochi is the name of a river and great pass in the North-West Frontier Province of Pakistan, **3**, 340

Toda People is the name given to a primitive race found in the Nilgiri Hills of Southern India, **3**, 402

Toddy. Term applied to a beverage made from coconuts, **1**, 310
— made also from dates, **1**, 311

Todmorden is a textile town of the West Riding of Yorkshire. It stands on the River Calder.

Toggenburg. Name, of a variety of domestic goat which has a high yield of milk, **8**, 319

Togoland. A part of West Africa which was originally a German colony but was divided between Britain and France. The British area is administered from the Gold Coast, **4**, 18

Togrul Tower is a strange building to be seen in the Persian town of Rhages.
Picture: **4**, 204

Toilers of the Sea is by the French novelist, Victor Hugo, and is about the Channel Islands, **3**, 53

Tokyo, on the Island of Honshu, is the capital of the Japanese Empire. Its name is sometimes spelt Tokio. 4, 255 *et seq.*
Pictures: National Diet Building, **4**, 251
Recording Their Votes, **4**, 255
Japanese Youths Take an English Lesson, **4**, 258

Toledo is a province of Spain with a capital city of the same name. The city of Toledo, famous long ago for the quality of its swords, stands on the River Tagus. It has an ancient cathedral, **4**, 135

Toleration Act (1689) gave freedom of worship to Nonconformists, **2**, 408

Toll-gate. In olden days people who entered certain towns to do business had to pay toll at a toll-gate. In more recent times, tolls were levied for the use of highways and bridges, **5**, 36
Picture: **2**, 212

Tolstoy, Count Leo Nikolaivitch (1828-1910). A Russian poet, novelist and reformer.

Toltecs were an ancient people of Central America where remains of their civilisation can still be seen, **4**, 297

Tomahawk. A hatchet having a sharp axe-edge as used as a weapon by North American Indians.

Tombs of the Kings. This is one of the sights of Thebes, the ancient capital of Upper Egypt. The tombs are those of the Pharaohs and they stand in the rocky face of steep cliffs, **4**, 196

Tom Cringle's. Name given to a giant cotton tree in Jamaica.
Picture **1**, 330

Tomlinson, Henry Major (born 1873). Has travelled extensively and written fascinating travel books. His novel *Galleons Reach* is widely read, **7**, 258
Picture **7**, 260

Tomlinson Surface Finish Recorder is a modern machine for measuring smoothness
Picture: **7**, 400

Tompion, Thomas (1638-1713). Known as the Father of English Clockmaking was responsible for some of the finest clocks ever made. Specimens of his work are at Buckingham Palace and in museums and private collections throughout the world. Tompion made the first clocks for the Royal Observatory at Greenwich in 1676. He was buried in Westminster Abbey, **9**, 220
Picture. Bracket Clock Made By Tompion, **9**, 221

Tom Sawyer is the title of a famous book by Mark Twain, **7**, 221
Picture **7**, 223

Tomsk. A town and province of western Siberia in the Soviet Union. In this province new steel plants are being developed, **4**, 118

Tom Thumb, "General." See *Stratton, Charles Sherwood*

Tom Thumb Nasturtiums. Name given to the dwarf varieties of this popular hardy annual.

Tom-tit. See *Titmouse.*

Tom Tower is the name given to the entrance to Christ Church College, Oxford. "Tom" being a massive bell within the Tower.
Picture: **3**, 38

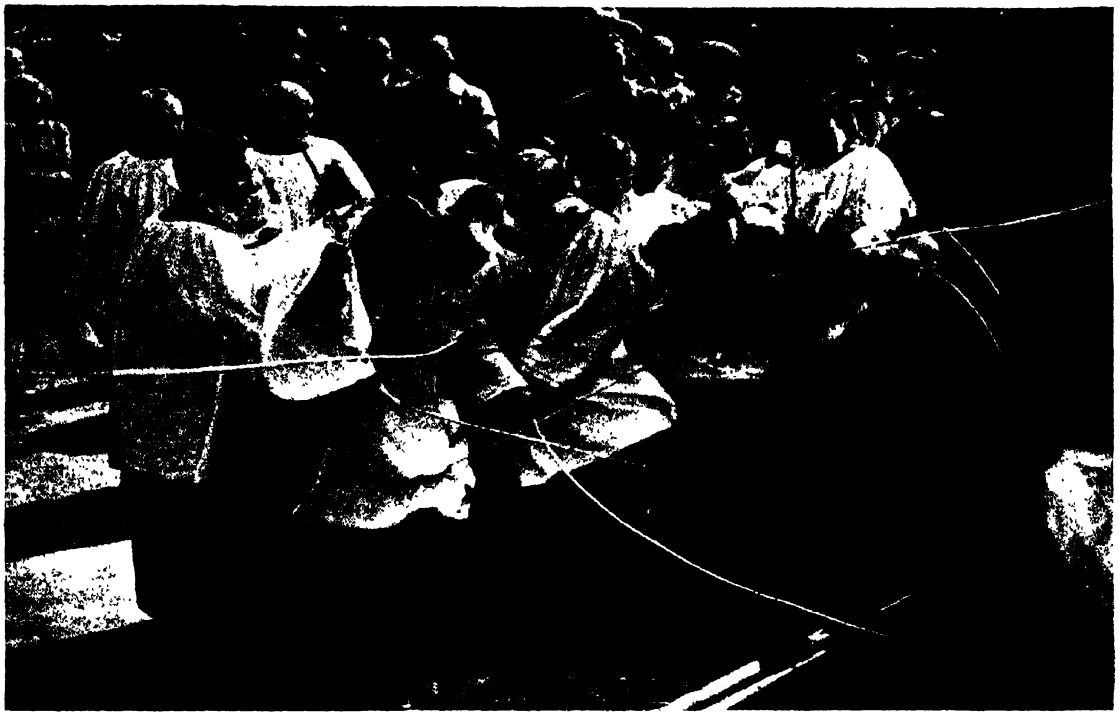
Tonbridge. A market town, printing, industrial and residential centre of Kent, standing on the River Medway. It has the remains of a castle and is famous for its School founded in 1553 and governed by the Skinners' Company.

Tonga Islands. The last surviving independent kingdom of the Pacific islands. It is now a British protectorate. Nukualofa, on the island of Tongatapu, is the capital, **3**, 390
Picture: **3**, 394

Tongariro, one of the National Parks of New Zealand, situated in North Island.
— how heather has spread through the park, **1**, 337

Tongariro is the name of one of the three volcanoes of North Island, New Zealand. At present it is not active, **3**, 258

OLD CUSTOMS AND TRADITIONS



Central Press.

Old customs die hard, and in Britain our Common Law is largely based on custom. The *traditions* (see p. 379) of the past and customs handed down to us by our forefathers still have their meaning. In this picture the old Ascension Day ceremony of "Beating the Bounds" by the chapel choir boys at the Tower of London is being carried out. The tour of the bounds and the beating takes place every three years.



Keystone

Scotland, too, is mindful of her ancient traditions, and here is an old custom connected with the Crusaders' Charter at Musselburgh, Midlothian. The "honest lad and lass" are leading the riders across the ford from the banks of the Esk by the old Roman bridge to visit all districts in the "honest toun," then on to the Castle to receive the flag which, when hoisted, marks the beginning of Festival week.

Tongking is a large district of French Indo-China. Its capital is Hanoi.

Tonkin is a state of northern Indo-China and a part of the Viet-Nam Republic. Its chief town is Hanoi which is also the capital of the Republic, **4**, 212

Tonto Rim is the most famous walk or ride for visitors to appreciate the vastness and magnificent colouring of the Grand Canyon, **4**, 273

Toothed-bill Pigeon. The bill of this bird, which is found in Samoa, is toothed like a saw. In some respects it resembles the extinct Dodo.

Toothless Animals include scaly ant-eaters, armadillos, etc., **1**, 116

Tooth, Temple of. See *Temple of the Tooth.*

Toowoomba. A large town of Queensland, Australia.

Tope is the name of a small species of shark found in British waters.

Topeka, an important railway centre, is the capital of the State of Kansas, U.S.A.

Topes is the name given to structures ancient Buddhists erected on sacred sites, **3**, 326

Topiary, description given to the work of training trees and shrubs to formal shapes. Yew and box are much used in topiary, being cut to represent birds, animals, etc.

Toplady, Augustus Montague (1740–78). An English clergyman, he is best remembered for his hymn *Rock of Ages.*

Tops Which Steer Ships. See *Gyroscopic Compass.*

Tor is the name given to an upstanding mass of hard stone as found where the rock is mainly granite. There are many such hills on Dartmoor, Yes Tor being 2,028 ft., **3**, 44

Tor Bay stands on the south coast of Devon. Brixham comes to the south, Torquay to the north and Paignton in the centre, **3**, 46

—William III landed here in 1688, **2**, 172, 408

Torii. A gateway built in front of a shrine in Japan.
Picture: **4**, 253

Tormentil is a small wild plant bearing yellow flowers. It has narrow leaflets.

Tormes is the name of a river of Spain. On its banks stands the historic city of Salamanca.
Picture: **4**, 133

Tornado is the name given to a violent storm of hurricane force most often encountered in tropical regions, **5**, 24
Pictures: Like a Vacuum Cleaner in the Sky, **5**, 19

Toronto is the capital of Ontario, Canada, standing on Lake Ontario. It is a great centre for timber, cattle, grain and fruit. Much of its electrical energy is obtained from Niagara Falls, and it has many manufactures, **3**, 161, 185 *et seq.*
Picture: **3**, 185
Photo-tone Supplement: Modern Architecture (Bank of Commerce), **7**, *between* 288 and 289

Torpedo. A cigar-shaped vessel of steel or bronze carrying a charge of high explosive. It is a powerful weapon of warfare used by naval ships and by aircraft. The first torpedo was devised by Robert Whitehead (1823–1905) and perfected by him during the years 1866–70.

Torquay is a large seaside resort in the English Riviera of South Devon. It stands on Tor Bay, **3**, 46; **9**, 312

Torquemada, Thomas de (1420–98). A Spanish friar who was in charge of the Spanish Inquisition.

Torrance, James. A Scottish artist who belonged to the Glasgow School, **7**, 105, 109

Torres, Luis Vaez de. A Spanish navigator, he discovered the Torres Strait in 1606 when he was second-in-command of an exploring expedition from Peru to the Moluccas, **3**, 200

Torres Strait, named after the Spanish navigator Torres, flows between Australia and New Guinea, **3**, 200
Pictorial Map: **3**, 243

Torres Vedras is a town of Portugal on the River Sizandro. It is famous for its Moorish citadel.
The famous lines of Torres Vedras were fortifications built by Wellington to keep the French at bay during the Peninsular War. They protected his base at Lisbon, **2**, 203; **4**, 137

Torridge is a river of north Devon. It flows into Bideford Bay, **3**, 51

Torricelli, Evangelista (1608–47). He was secretary to Galileo. He invented the barometer and made other scientific discoveries.
Picture: **5**, 1

Tortoise. A reptile living on land in many of the warmer parts of the world, and feeding chiefly on plants. There is also a variety called the water or Pond Tortoise, which spends much time in the water, **1**, 113 (*p.h.*)

—as a House Pet—how to house and feed, **8**, 324
Picture: **8**, 324

Tortoiseshell. (1) A substance obtained chiefly from the Hawksbill Turtle, **1**, 114; **9**, 407
(2) Name of a variety of butterfly, **1**, 253

Torun. An ancient town of Poland on the River Vistula. It was founded in 1213 and is the birthplace of the great astronomer Copernicus. It has a fine old town hall dating from the thirteenth century.
Picture: **4**, 123

Tory. Name of one of the two great political parties in the eighteenth and nineteenth centuries. Later the name was changed to Conservative, but in recent years the name has come into favour again, **2**, 173

Toscanelli was a famous fifteenth-century geographer of Florence, **2**, 273

Tossing the Caber is an event at Highland Games and other athletic fixtures. The caber is a pole about 20 ft. in length.
Picture: **3**, 133

Tosti, Francesco Paolo (1846–1916). An Italian composer, world famous for his songs, best-known of which is "Good-bye."

Tostig. Brother of King Harold II who claimed the English throne in 1066, **2**, 93

Toteninsel is a small island in the Rhine.
Picture: **4**, 66

Totnes is a town and small port on the River Dart in South Devon. It is famous for its Butterwalk and other ancient buildings.

Toucan. A bird of South America noted chiefly for its immense beak.
Picture: **2**, 342

Toulon is an ancient city of the south of France most famous as a great naval station, **2**, 198

Toulouse, standing on the River Garonne, is the capital of the Haute-Garonne department of France. It is noted for its ancient cathedral.

—it was the scene of the last battle of the Peninsular War (1814), **2**, 203, 410

Tourcoing is a town of the Nord Department of France noted for its textile wares, **4**, 13

Tournai is a linen manufacturing town of Belgium on the River Scheldt. It has a fine cathedral, **4**, 24

Tournament. Name given to sham fights between knights in armour in the Middle Ages. Tournaments drew spectators of every class, **2**, 118
Picture: **2**, 120
Colour Plate. The Tournament at Ashby, **7**, *Frontispiece.*

Tourniquet is the term employed to describe a piece of wood used to tighten a bandage that has been applied to stop bleeding, **8**, 236
Picture: **8**, 237

Toussaint L'Ouverture (1746–1803) West Indian negro leader, born in Haiti. He became commander-in-chief of the island and eventually drove out the French royalists, the British and the Spanish. On refusing to obey Napoleon's orders to restore slavery he was captured by the French and died in a French prison, **4**, 307

Towcester, well-known for its boots and shoes, is a small town of Northamptonshire. In the district there was a Roman station.

Tower Bridge, which is named after the nearby Tower of London, is the last bridge towards the mouth of the Thames. The bascules are raised to allow ships to pass. Opened 1894, **5**, 52

—the foundation stone was laid by King Edward VII when he was Prince of Wales, **2**, 223
Picture: **3**, 9
Colour Plate: The Pool of London, **3**, *facing* 84
Photo-tone Supplement: Tower Bridge, **5**, *between* 64 and 65

Tower Hill. A point of higher ground near the Tower of London. Here was the place of public execution in olden times.

Tower of Babel. This strange building is said to have been set up in the country we now know as Iraq, **4**, 199

Tower of London. This famous relic of the past was begun by Bishop Gundulf under William the Conqueror. It is a veritable storehouse of English history, **3**, 7; **7**, 325. (*p.h.*)
Pictures: Yeomen Warders of the Tower of London, **3**, 9
In the Tower of London, **7**, 324
Architecture of the Normans, **7**, 325
Photo-tone Supplement: London's Historic Tower, **2**, *between* 128 and 129

Tower of Peace is a notable War Memorial at Ottawa, Canada.
Picture: **3**, 186

Town and Country Planning. It was long felt that the building of new towns and the use of land generally should be properly planned in the interests of the whole community. In 1943 the Ministry of Town and Country Planning was established and in 1945 a New Towns Bill was brought in which proposed the building of some twenty new towns in England and Wales. The Town and Country Planning Act of 1947 made the county and county boroughs responsible for local planning.

Townshend, Viscount (1674-1738). A politician popularly known as Turnip Townshend, he did much to improve farming methods in his time, **1**, 386, **7**, 362

Townsville is a port of northern Queensland in Australia. It is a sea gateway for the sugar plantations and mines of this State.
Pictorial Map: **3**, 243

Toys and Games. A description of various toys and how they are made, and of some games and the making of balls and other material for them, is given in *Toys and Games*, **9**, 225 *et seq.*
Pictures: Where Will Our Home Be, **9**, 225
Toy Cavalcade, **9**, 226
Dolls, Cars and Horses That Move, **9**, 227
A Cricket Bat is Made, **9**, 228
A Cricket Ball is Made, **9**, 229
Making Golf Balls, **9**, 230
Balls for the Tennis Court, **9**, 231
A Housing Estate for Dolls, **9**, 232
For the Soccer Season, **9**, 233

T.P.O. Special. Name given to a special Travelling Post Office train which runs every night in both directions between London (Euston) and Aberdeen. It has six postal coaches in which sorting is carried on throughout the journey and six brake vans. Mails are dropped and picked up by apparatus as the train speeds through the night, **6**, 281
Pictures. Sorting the Mail, **6**, 279
The Line-Side Apparatus, **6**, 282

Traction. The drawing along of a thing; hauling; haulage. Steam traction is used on most of our railways, though electric traction has been increasingly used in recent years.
Various forms of light traction engines are used for drawing and working ploughs, diggers, threshing and other agricultural work.
See *From Traction Engine to Racing Car*, **5**, 161 *et seq.*
Pictures: An Early Steam Carriage and Trailer, **5**, 162
A Bulldozer for London's New Embankment, **5**, 178
The World's Largest Walking Dragline, **5**, 179
Planting Potatoes the Modern Way, **5**, 182

Trade means the process of buying and selling. Trade goes on, not only between ouselves and our shop-keepers, but between the different nations of the world. In the case of Britain, we live by our trade with the world, for we can never hope to produce all the things we need within our islands. The story of *Our Trade with the World* tells of all the things that Britain buys and sells in many different countries, **4**, 337 *et seq*

Trade Mark is the name given to the mark or design or even invented word which the manufacturer has registered to indicate his special goods, **9**, 416

Trade Unions. Name given to groups of wage-earners who form themselves into associations for the betterment of conditions in their particular trade. Many of the restrictions on them were abolished in 1875, **2**, 222

Trade Winds blow towards the Equator from the north-east in the Northern hemisphere, and from the south-east in the Southern Hemisphere. They occur in the Atlantic and Pacific Oceans, and are caused by the earth's spin at the Equator. The trade winds were of great importance to sailing-ships and have a big influence on climate.
—described by William Dampier, **5**, 1

Tradition means the handing down from one generation to another of beliefs or customs. Towns and villages have their old customs, often going back into the remote past. Schools have their traditions which are often stronger than any rules, and in many places old customs are still observed because tradition says it shall be so.
Picture: Old Customs and Traditions, **10**, 377

Trafalgar, Battle of. Fought off Cape Trafalgar on the coast of Spain between British and combined French and Spanish forces October 21st, 1805. It was a great victory for Nelson, but he lost his life in the engagement, **2**, 198, 199, 410, **8**, 10
Picture: **2**, 197, 199

Trafalgar Square, London, is laid out in memory of the great sea battle. The figure of Lord Nelson, at the top of the Nelson Column, is three times his natural height, **2**, 200
Pictures: **3**, 18, 20; **10** 225

Tragacanth is the name of a gum obtained from the sap of a small bush found growing in Persia, **1**, 334

Tragopogon. A plant which scatters its seeds by means of parachutes, **1**, 374

Train Ferry. Name given to a system by which passenger trains and railway trucks are run on to steamers, ferried across a strip of water and taken ashore on the other side. There is a train ferry for goods between Harwich and Zebrugge, **9**, 396

Trajan, Marcus Ulpius Nerva (53–117). A Roman emperor and general, he was a great road-maker and builder, **4**, 96

Trajan's Pass is a deep gorge in the River Danube. On one of the walls an inscription records the passage of the Roman legions, **4**, 96

Trajan's Pillar. A Roman monument in honour of the Emperor Trajan (A.D. 56–107).
Colour Plate: **7**, *between* 336 and 337

Trajan's Wall still remains in part on the Danube. It was built to keep out the Visigoths, **4**, 96

Tramp. Term applied to merchant ships which have no fixed schedule of sailings but voyage to any part of the world and take cargoes to and from any port, **8**, 32

Transcaucasia is a district of the Soviet Union. It embraces the republics of Georgia, Azerbaijan and Armenia

Transformers are used to decrease or increase the pressure of an electric current, **6**, 294
Picture "Stepping-up" the Voltage, **6**, 304

Trans-Iranian Railway was completed during the Second World War and runs from the Caspian Sea to the Persian Gulf, **4**, 203

Transitional. Name given to the period of architecture between the Norman and Gothic styles, **7**, 298

Transjordan. An Arab kingdom of the Middle East, it is now officially known as the Hashimite Kingdom of the Jordan. It obtained independence from Britain by treaty in 1946 and the Emir Abdullah was proclaimed king. His capital is Amman. The country is agricultural and pastoral, with large tracts of desert.
Pictures. A Sheik and His Guests, **2**, 384
Hewn in the Living Rock, **4**, 189
In the Vanished City of Petra, **4**, 190

Translucent. Allowing light to pass, but not transparent. Ground glass and opal glass are translucent

Transport means carriage or conveyance of persons or things from one place to another by ships, trains, aeroplanes, motor vehicles, cableways, animals or any other means. In this country the Ministry of Transport is responsible for the laws and regulations controlling the different forms of transport
See *How Steam and Petrol Work for Man*, **5**, 115 *et seq.*
Photo-tone Supplement: Transport in Many Lands, **6**, *between* 304 and 305

Transporter Bridge is a long girder supported at the ends on tall towers and spanning the water to be crossed. The largest bridge of this type is at Runcorn in Cheshire, **9**, 411
Picture. **9**, 410

Trans-Siberian Railway. It runs from Moscow in Europe to the shores of the Pacific, **4**, 110

Transvaal is a province of the Union of South Africa and is primarily a stock-rearing country. But there are rich mineral deposits, including gold (the centre for this precious metal being Johannesburg). The provincial capital is Pretoria, which is also the capital of the Union. Near Pretoria is the Premier Diamond Mine from which the great Cullinan diamond came, **2**, 225; **3**, 278 *et seq*
Pictures: South African Gold Mines, **3**, 282
In a Valley of Diamonds, **3**, 283
A Scene in the "City of Gold," **3**, 284
Union Buildings, Pretoria, **3**, 285
Girls' School at Johannesburg, **3**, 288
A Skymaster Over Johannesburg, **3**, 289
A Native Location in the Letaba District, **3**, 290
On the Fruit Farms, **3**, 295
Photo-tone Supplement: The Union of South Africa, **3**, *between* 304 and 305

Transylvania forms part of Western Rumania. It produces agricultural crops and livestock and has some mineral wealth.

Transylvanian Alps is the name given to a range of mountains in Rumania. The chain is an extension of the Carpathians, **4**, 90, 97

Trapani is a port of the island of Sicily.

Trapping. Trapping for furs is an important industry in the Dominion of Canada, especially in the northern regions In some parts, there are special ranches for this purpose, **3**, 162 *et seq.*
Picture. Fur Trapping in Labrador, **3**, 162
At a Fox Ranch on Prince Edward Island, **3**, 163
Inspecting His Catch, **3**, 165

Trasimene, a lake of central Italy.
- the Battle of Lake Trasimene, fought between Romans and Carthaginians, 217 B.C., **2**, 66
Picture **2**, 67

Travancore is one of the Madras states of India, **4**, 372
Picture: A Travancore Ceramic Factory, **3**, 320

Traveller's Joy. Name given to the hedgerow or wild form of clematis Known also as Old Man's Beard, **1**, 305
Picture: **1**, 304

Travellers' Rest. Name sometimes given to the plant Tansy, the leaves of which make a refreshing wash for the feet

Trevelyan, George Macaulay (born 1876), modern historian, he wrote a *History of England* and his *English Social History*, published in England in 1944, has been a great success in many countries, **2**, 227, **7**, 260
Picture **7**, 261

Trawler. A large fishing vessel, bigger than a drifter, and used not only in the North Sea but as far north as the Arctic Ocean, **8**, 74
Photo-tone Supplement. Ships Today and Yesterday (Trawler *Rinovia*), **5**, *between* 272 and 273

Trawler, Model. How to make a model steam trawler.
With *Diagrams*, **8**, 351

Trawl-Net. A long, purse-shaped bag or net used for dragging behind a boat in deep-sea fishing.

Treachery of Count Ganelon, The. A tale from the Song of Roland, **5**, 409

Treason means the breaking of a subject's allegiance to his king or government. To attempt to kill the sovereign or depose him, and to assist an enemy in invading the country are two forms of treason—or high treason, as it is now commonly called.

Treasure Trove. Coin or precious articles found in the ground or some hiding-place, whose owner cannot be found. By English law this belongs to the Crown and the finder is rewarded. It does not include goods found in the sea, nor treasure found outside this country, **9**, 338

Treasury of Verse, A Children's. An Anthology or Collection of Poems, **9**, 85

Treble Crochet is a method of doing crochet work when the wool is put over before the hook is inserted, **8**, 400
Picture: **8**, 401

Trebizond is a city of Asia Minor, on the Black Sea. It was visited by Marco Polo, **2**, 270

Tredegar, Monmouthshire, is a small town in the coalfields interested in the iron and steel industries, **3**, 94

Tree. A woody-stemmed perennial plant, usually more erect than a shrub, from which it differs in size only. All mature trees produce flowers in the spring, from which normally, and under the right conditions, seeds develop.
Most trees are deciduous, that is they shed their leaves annually, but a few, such as the conifers, are evergreen.
-Tree Roots, **1**, 275
--development of foliage, **1**, 280
--trees and forestry in general, **1**, 311-332
--biggest in the world, **1**, 328
-trees of our countryside, **1**, 395-416
questions and answers concerning trees, **9**, 373-374

Tree Creeper. Name of a small British bird which creeps over the bark of trees A long beak enables it to extract its food from the crevices.
Colour Plate: British Birds' Eggs, **6**, *facing* 396

Tree-Fern. Species of fern which reaches the height of a tree
Photo-tone Supplement: (New Zealand Tree-Fern), **1**, *between* 336 and 337

Tree Frog. Species of the frog family which lives mainly in trees; the colour of foliage, it has toes for grasping tree branches.

Tree Kangaroo. See *Kangaroo, Tree.*

Tree of Heaven. See *Ailanthus*

Tree Shrew. An animal of Malaya and India. In appearance rather like a small squirrel and lives entirely in trees, feeding on insects and fruits

Tree Sparrow. See *Sparrow.*

Tremadoc Bay is on the coast of Wales at the extreme north of Cardigan Bay, **3**, 108
Picture. **3**, 107

Trenchard, Lord (born 1873). Joined the Army in 1893 and served in South Africa A pioneer in military flying he did valuable work as commander of the military wing of the R.F.C. in the 1914–18 war. Chief of Royal Air Staff 1918–28. Commissioner of Metropolitan Police 1931–35. Made a Viscount in 1936, **2**, 244

Trenching is a gardening operation to ensure deep digging of the soil, **8**, 274

Trengganu, on the east coast of the Malaya Peninsula, is one of the states of the Federation of Malay. Its capital is Kuala Trengganu.

Trent. A river of the midlands of England. It rises in North Staffordshire and flows through Burton, Nottingham and Newark before joining the Ouse when the two become the Humber, **3**, 71

Trentino is the name of a district of northern Italy embracing the Dolomite Alps.
Photo-tone Supplement: The Continent of Europe, **4**, *between* 112 and 113

Tresco is one of the *Scilly Islands* (*q.v.*).

Trevithick, Richard (1771–1833). A Cornishman who was a pioneer in the application of steam power. He designed the first road locomotive and an early rail engine. As a mining engineer he invented a steam pump for use in the mines, **3**, 48; **5**, 122, 162
Pictures: Pumping by High Pressure, **5**, 117
Our Earliest Road Engine, **5**, 121

Triangle. Perhaps the simplest musical instrument in use today. A bent rod of steel played by a steel rod, it has a clear tone which is useful for occasional use in an orchestra.
See *Musical Instruments.*

Tributary. A river emptying its waters into a larger river; one who pays tribute
The Thames has a large number of tributaries or tributary streams. Among them are the Lea, Wey, Brent, Kennet, Loddon, Colne, Windrush, Cherwell and Evenlode.

Triceratops. Name given to the prehistoric three-horned dinosaurus, one of the last of its race
Picture: **1**, 19

Trichinopoly is a large district of Madras, Southern India Here both rice and cotton are grown.
Trichinopoly is the chief town of the district, noted for its great rock fortress, **3**, 320
Picture **3**, 319

Trieste, Free Territory of. Until 1947, Trieste was a port and city of Italy. In that year, the peace treaty with Italy was signed and provided for the creation of the Free Territory, because Trieste was claimed by both Italy and Yugoslavia Difficulties arose and the occupation of Trieste by Allied forces (British, American, and Yugoslav) continued while the United Nations sought a solution to the problem Trieste is important as an Adriatic outlet for Italy, Yugoslavia, and all the countries of the eastern and central Europe, **4**, 156

Triga was the name given by the Romans to a three-horsed chariot

Trigger Fish. A fish with two spines in place of a back fin. It can inflict dangerous wounds, **1**, 219

Trilithon is the name given to an ancient monument consisting of a group of three large stones, two of them upright and supporting the ends of the third, **7**, 283

Trillium, a hardy spring-flowering perennial plant which bears flowers and leaves in threes. Also known as the Trinity Flower, Wake Robin and Wood Lily

Trilobites. Animals like wood-lice that flourished in enormous numbers in very early times in the world's history, **1**, 12
Pictures: **1**, 12, 14

Trim, on the River Boyne, is the county town of Meath, Eire. It is 30 miles north-west of Dublin.

Trincomali is a seaport of Ceylon noted for its harbour. During the Second World War it was an Allied naval base.

Tring is a market town of Hertfordshire.

Trinidad is a large British island of the West Indies, famous for its lake of pitch. Sugar, cocoa and copra are among its products. Port of Spain is the capital, **3**, 398; **4**, 389
—discovered by Columbus, **2**, 278

Pictures Mahean Bay, Trinidad, 3, 395
Husking Trinidad Cocoa Pods, 4, 390
Trinidad's Oilfields, 4, 391

Trinity Brethren. A corporation having their headquarters at Trinity House, London. They control lighthouses, issue licences to pilots, etc., 9, 408

Trinity College, Cambridge, was founded by Henry VIII in 1546. Its Great Court is the largest in Cambridge. King Edward VII was a student here when Prince of Wales, 2, 223
Picture 3, 68

Trinity Flower. So named because both the leaves and the flowers grow in threes. Other names for this spring-flowering perennial plant are Trillium, Wake Robin and Wood Lily.

Tripcock. A device used on London underground railways to stop trains that over-run signals.

Tripoli is one of the chief ports of Libya in North Africa. Not far from it are the ruins of a great Phœnician seaport, 4, 166
—British forces enter Tripoli, 4, 253

Tripoli is a port of the Lebanon republic and is one of the terminals of the oil pipe line from the fields at Kirkuk in Iraq, 4, 186, 202

Triremes were [illegible] vessels of the ancient Greeks and Romans. They had three rows of oarsmen, one above the other, 2, 25, 4, 132

Tristan da Cunha. A small group of British islands in the Atlantic, about half-way between South America and the Cape of Good Hope. There is an important weather and wireless station on the main island, Tristan, 3, 394; 9, 314

Trolhätten Falls. Famous waterfalls a few miles from Gothenburg, in Sweden. They operate great power-houses, 4, 37

Trollope, Anthony (1815-82). English novelist and author of *Barchester Towers* and over fifty novels giving a faithful picture of Victorian life among the middle classes. He is also notable for having instituted the postal pillar box, 2, 141; 7, 215

Trombone. This is a brass wind instrument with a powerful tone. It is really a " slide " trumpet, which can produce the chromatic scale by means of slides. It was evolved from the sackbut whose name it at first took, and further back from the Roman *buccina*. Tenor and bass trombones are important instruments in an orchestra.
See *Musical Instruments.*

Tromp, Martin van (1597–1653). A Dutch admiral who raided the Thames and burned our shipping It is said that he carried a broom at the masthead to show that he would sweep the English from the seas. He was later defeated by Admiral Monk.

Tromp, Cornelius van (1629–1691). Dutch admiral, second son of Admiral Martin van Tromp. He took part in various naval engagements. In 1675 he visited England and was received by Charles II, 2, 168

Tromso is a port of Norway, situated on an island off the mainland. Here were buried Andrée, the Polar explorer, and his companions, 2, 361

Trondhjem. A town on Trondhjem fjord which was once the capital of Norway. It is an export centre and has an old cathedral, 4, 45

Troon is a seaport and holiday centre on the Firth of Clyde, Ayrshire, Scotland, 3, 121

Trooping the Colour. A military ceremony performed by the Brigade of Guards on the occasion of the official birthday of the Sovereign.
Picture: Trooping the Colour, 10, 383

Tropic of Cancer. This is a theoretical northern dividing line marking the boundary between the Temperate and Torrid Zones of the World. Between the Tropic of Cancer and the Tropic of Capricorn lie the Tropics, the hottest belt of the earth.

Tropic of Capricorn. This is a theoretical southern dividing line marking the boundary between the Temperate and the Torrid Zones of the World.
Pictorial Map 3, 242 and 243

Troposphere. The lay[illegible]er of air nearest the earth, extending to a height of about seven miles in our latitude, 5, 4

Trossachs is the name given to a district of Perthshire, Scotland, a pass in the mountains between Lochs Achray and Katrine, 3, 124
Picture: 3, 135

Troubadors were a class of poets who as long ago as the twelfth century, moved from village to village in some Continental countries, reciting verses, singing songs and playing tunes, 7, 157

Trout is a fresh-water fish much favoured by anglers. It varies in size from a half-pound upwards The record for size is generally conceded to a fish weighing 39½ lb. caught in Loch Awe in 1866, 8, 251
Special Colour Supplement British Fresh Water Fishes, 8 *between* 256 and 257 (Plate 1)

Trouville is a holiday resort on the coast of northern France, near Havre.

Trowbridge. A large town of Wiltshire interested chiefly in the woollen industry, as it has been for four centuries.

Trowel. A gardening implement useful when setting out small plants, 8, 274

Troy was an ancient city of Asia Minor where Greek civilisation flourished many hundreds of years before the Birth of Christ. When the site of the city (at Hissarlik) was excavated the remains of five cities, one on top of another, were found, 2, 402; 9, 320 1

Troy, Histories of. Title of a book translated from the French by Caxton, 2, 138

Troy, The Wooden Horse of. A Tale from the Greek, 5, 368

Troy Town was the name given in the writings of " Q " (Sir Arthur Quiller-Couch) to *Fowey* (*q.v.*).

Trucial Sheikhdoms. These are territories of Arabia along the coastal strip of the Gulf of Oman ruled, as their name suggests, by Sheikhs, 4, 205

Truffles are a form of edible fungi often found just beneath the soil round trees, especially beeches. Dogs are trained to unearth truffles, 1, 359

Truman, Harry S (born 1884) became President of the United States of America on the death of President Roosevelt in April 1945 Born in Missouri, educated at the local high school, he became a drug store clerk, timekeeper in a newspaper office, bank clerk, farmer, and a small shopkeeper. During the First World War he served in the U S Army as a gunner and became a captain Elected to the House of Representatives in 1934, he was later elected to the Senate. At the 1944 elections he became Vice-President in January 1945, to succeed to the highest office only three months later He was re elected President in 1948 but did not stand for another term at the 1952 Election

Trumpet. The trumpet in its simplest form is similar to the bugle (*q.v.*), which produces only the notes of the harmonic series The valve trumpet and the slide trumpet can, however, produce the notes of the chromatic scale. The trumpet is pre-eminently the musical instrument of the cavalry, and trumpet fanfares are a feature of many ceremonial occasions
See *Musical Instruments.*

Trumpeter is the name of a crane-like bird found in South America It makes a loud trumpeting noise.

Truncheon. A short but heavy club Every policeman is armed with a truncheon, carried in a special pocket

Truro is a city of Cornwall and a centre for china clay and other industries It has a fine modern cathedral, 3, 46
Picture 3, 49

Tryal was the name of a sloop concerned with Anson's voyage round the world, 2, 319

Tsai Lun, who lived about A D 100, was the name of an early Chinese inventor He found out how to make paper from various materials, 6, 329

Tsaing is the name of a bison found in the jungle of Ceylon, 3, 368

Tschaikowsky, Peter Ilyich (1840 93). A brilliant Russian musical composer. He wrote operas, symphonies and orchestral pieces (*Pron* Chikovski).

Tsetse Fly. Found in the tropical parts of Africa, it strikes down horses, oxen and other animals with a disease akin to sleeping sickness, 2, 333, 7, 416, 9, 370

Tshwala is a favourite drink of the Zulus It is made from Kaffir corn, 3, 310

Tsining is a town in the Shantung province of China It stands on the banks of the Grand Canal
Picture 4, 224

Tsinling Shan is the name of one of the great mountain systems of China. It runs into the very heart of China and forms, with lesser ranges the Central Mountain Belt, 4, 234

T.-S.R. means Trans-Siberian Railway, 4, 110

Tuareg. The name of a tribe of nomad Arabs, 3, 380

Tuatara. The name of a harmless, lizard-like reptile which is found in New Zealand, 3, 261

Tuba. The tubas are a family of brass wind instruments of powerful tone, deriving from the straight war trumpet of the Romans. Like the Saxhorns, they are the result of the comparatively recent application of valves to the trumpet family. They are in evidence in orchestras and military bands.
See *Musical Instruments.*

Tuber is the name given to an underground stem on which buds form. The potato is an example.

Tube Railways. See *London Tube Railways.*

T.U.C. means Trades Union Congress.

Tucuman is a province of Argentina where cotton, sugar-cane, maize and fruit are grown, **4**, 320

Tudor, Henry. See *Henry VII.*

Tudor, Sir Owen. Father of Henry VII (*q.v.*), **2**, 136

Tudor Monarchs in English History were Henry VII and VIII, Edward VI, Mary and Elizabeth. The Tudor Period lasted from 1485 to 1603, **2**, 136 *et seq.*

Tugela. This is the name of a river of Natal in the Union of South Africa. It rises in the Drakensberg Mountains and comes down to the sea north of Durban, **3**, 304

Tui is the Maori name of a New Zealand bird, also known as the Parson Bird because of its talking powers, being a remarkable mimic when in captivity. It is also a great songster.
The Tui has a long, rather curved beak and a long broad tail. Its general colour is a metallic green with purple reflections on the shoulders, and the throat is ornamented with two tufts of white feathers.
Pictorial Map · New Zealand, **10**, 261.

Tuileries. The name of a royal palace in Paris that was stormed by the mob during the French Revolution The palace was burned down in 1871 and the name now denotes beautiful gardens, **4**, 10 and 12

Tuke, Henry Scott (born 1858). Well-known British artist, he was associated with the New English Art Club, **7**, 111
Picture: **7**, 114

Tula is the name of an important industrial town and district of the Soviet Union in the vicinity of Moscow, **4**, 117

Tulip. A bulbous plant, of which there are many varieties flowering at different times, **8**, 280; **9**, 371

Tulips. This name was given to high explosive mines used against the Turks by Lawrence of Arabia, **2**, 384

Tullamore stands on the Grand Canal and is a noted market for farm produce. It is county town of Offaly, Eire.

Tulle. An ancient city of France. The silken fabric known as tulle was first made here.

Tull, Jethro (1674–1741). A barrister who was also a pioneer in new agricultural methods, **7**, 362

Tumbahombre is a garment worn by the women of the primitive Indian people of Panama, **4**, 306

Tummel. A river of Perthshire, Scotland, which empties into the Tay. It is well known by anglers.

Tunbridge Wells. A noted inland watering-place and health resort of Kent. It is famous for the ancient promenade known as the Pantiles.

Tundja Valley in Bulgaria is a centre of rose growing, **4**, 360

Tundra is the name given to a plain that has no trees, but only coarse grass and undergrowth. Northern Russia has tundra lands, which are common in many parts of the world, **1**, 364
—the tundra country of Canada, **3**, 162
—the tundra country of Europe, **4**, 4

Tungsten is a very heavy grey metal, one of the elements (symbol W) obtained from wolfram, in which it is combined with iron and manganese.
Its ability to resist great heat makes it a useful material for electric lamp filaments. Tungsten steel is used for permanent magnets and metal-cutting tools.

Tungus are a people of the Arctic regions belonging to the Soviet Union, **4**, 108

Tunis is the capital of Tunisia which is ruled by a Bey under French protection. It is also a port, for it is linked by canal with the Mediterranean. On its outskirts are the ruins of ancient Carthage, **4**, 166

Tunisia. A French protectorate of North Africa which has its own ruler or Bey. The city of Tunis is the capital. Agriculture is the chief industry, citrus fruits, olives, and dates being the principal crops, **4**, 18, 166, 377

Tunja. The name of a tributary of the River Maritza which flows through the plain of Rumelia in Bulgaria, **4**, 97
Sometimes spelt *Tundja.*

Tunnels, Railway. The longest in the world are the Simplon, Apennine, Loetschberg, and St. Gotthard, if we exclude those of the London tube railways, **5**, 128
—the world's highest tunnel is the Galera, on the Oroya-Lima line in South America. It is driven at 15,665 ft., **5**, 138
—twin "tube" tunnels from Morden to Golders Green, **9**, 416

Tunny. A giant fish of the mackerel family, found in the Mediterranean, but also in other more northerly seas in summer time, **1**, 212

Tunstall, Staffordshire. One of the towns of the Potteries, it is noted for earthenware goods, **3**, 72; **9**, 195

Tuolumne is a river of California, U.S.A. It flows through the Yosemite National Park (*q.v.*).
Picture: **4**, 284

Tupic is the name of the skin tent used by Eskimos during the summer, **3**, 163
Picture: **3**, 174

Turbine. A wheel or drum enclosed in a casing and having fixed to it vanes or buckets which are made to revolve by steam or water striking or pressing on them.
The revolving part is mounted on a shaft which drives whatever is connected to it.
Turbine engines, as used in ships, were invented by Sir Charles Algernon Parsons, **5**, 256
Pictures: The Engine that Gave us Faster Steamships, **5**, 259
A Drill for Turbines, **5**, 282
Colour Plate: Boring for Oil by Turbine, **6**, *Frontispiece.*

Turbo-jet Engined Aeroplanes are a very recent development of the jet-propelled aeroplane, **5**, 238
Pictures: First Turbo-jet Engined Air Liner, **5**, 233
Experimental Turbo-jet Engined Aeroplane, **5**, 239

Turbo-prop Engined Aeroplanes are another development of the jet-propelled aeroplane, **5**, 237
Pictures: First Turbo-prop Engined Air Liner, **5**, 231

Turbot. One of the flat fish, much esteemed as food, **1**, 220

Turf. This is the word used by Irishmen instead of peat (*q.v.*), **3**, 143

Turin. A great industrial town of northern Italy. Its population of over 700,000 makes it the fourth largest city in the country, **2**, 177, **4**, 150

Turkestan is a vast area of Central Asia much of which is now within the frontiers of Soviet Russia whose republics of Kazakhstan, Turkmenistan, Uzbekistan, Tadjikstan and Kirghizia embrace a considerable part of its area.

Turkey is a country of both Europe and Asia, that part of the republic in Asia Minor occupying the region known as Anatolia Ankara (often spelt Angora) is the capital, but Istanbul (formerly known as Constantinople) is the largest city. The population is nearly 18 million Turkey has very fertile soil and grows grain crops, tobacco, and cotton She is rich in minerals, but these are not yet fully developed, **4**, 158 *et seq.*, 367
Pictures. Turkey's Ancient Capital, **4**, 162
And Her Modern Chief City, **4**, 163
Ankara, Turkey's Modern Capital, **4**, 164
A Turkish Cotton Factory, **4**, 355
Sorting Tobacco Leaf, **4**, 356
Photo-tone Supplement: The Continent of Europe, **4**, *between* 112 and 113

Turkey. A large bird of the pheasant family. It is a native of North America but was erroneously thought to have come from Turkey when first introduced into England. In France it was believed to have come from India—*poule d'Inde* and is now called *dindo.* (*p.h.*)

Turkey Buzzard. A bird of the vulture family found in many parts of America.

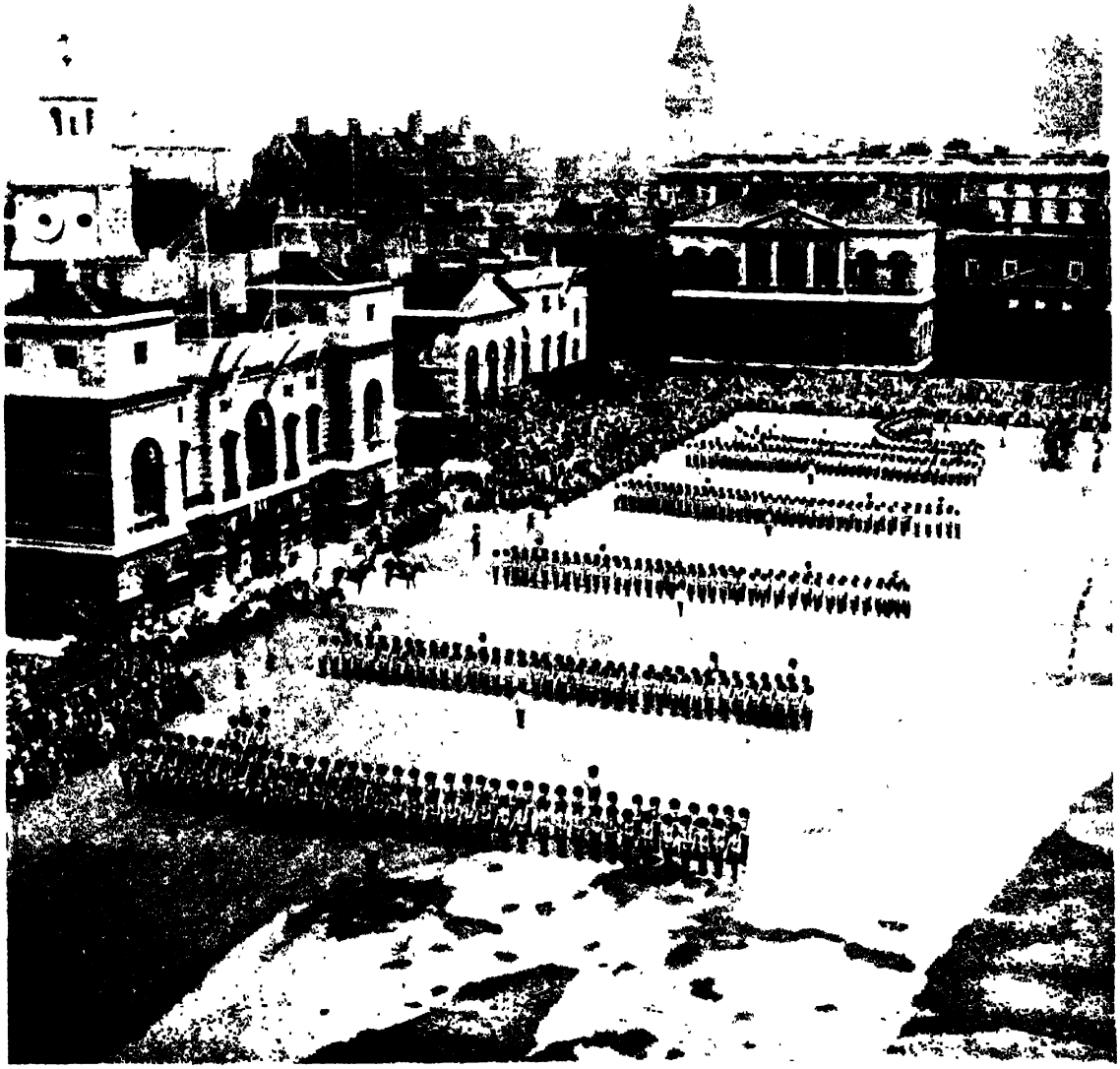
Turkey Oak. A tree first established in this country nearly two hundred years ago. It grows more quickly than the common oak.

Turkey Wheat. Name sometimes given to maize or Indian corn.

Turkis. A race of Central Asiatic people, **3**, 340

Turkish Bath. A hot air bath which induces profuse perspiration, thus clearing the skin and ridding the blood of harmful matter. It was first introduced into England in 1860 by a Turk who also introduced massage.

TROOPING THE COLOUR



P.A.-Reuter

To mark the occasion of the Sovereign's official birthday, the ceremony known as *Trooping the Colour* " (see p 381) is carried out by the Brigade of Guards. The traditional full dress of scarlet and blue, with bearskin caps, is worn by the Guards. In this photograph, the Queen, riding her favourite horse, Winston, is seen at the saluting-base in the left centre of the picture as the Guards march past in the brilliant post-Coronation ceremony on the Horse Guards Parade in London

Turku is a great timber port of Finland. It was formerly known as *Abo*, **4**, 48

Turner, Joseph Mallord William (1775–1851). An English artist who became famous for his sea scenes and landscapes, **2**, 221; **7**, 84
Picture: **7**, 84

Turner Valley is in the province of Alberta, Canada, and is noted for its oil wells, **3**, 196
Picture: **3**, 192

Turning Stair. The meaning of the name given to one of the sea snails, *i.e.*, *Wentle-Trap* (*q v.*)

Turnip. One of the root vegetables, much cultivated for human food and for sheep and cattle. It has been cultivated from ancient times.

Turnpike. Turnpike gates were general on English roads in the seventeenth and eighteenth centuries and barred the way to traffic for the collection of tolls.
See also *Toll Gate.*
Picture: Travellers Paying Toll at the Turnpike, **2**, 212

Turnstone. Name of a shore-loving bird of the plover family that visits Great Britain from the Arctic regions during the winter months. It is about 9 in. long and has black and white plumage.

Turpentine. A soft resin that oozes from certain kinds of pine and fir trees. What we commonly call turpentine (or "turps" for short) is a spirit distilled from the resin, and used in making paints and varnishes. Much of it comes from the U.S.A., **9**, 374
Picture: **4**, 386

Turpin, Dick (1705–39). English highwayman who became partner for a time with another notorious highwayman, Tom King. His ride to York on his horse, Black Bess, has been made the subject of many stories. Turpin was executed at York.

Turrialba is a town of the Central American republic of Costa Rica. There is an important American agricultural institute here, **4**, 305

Turrialba is one of the loftiest peaks of Costa Rica. It is 10,910 ft. high, **4**, 304

Turtle. A water-loving member of the tortoise family, found chiefly in tropical countries, **1**, 113
—where does it lay its eggs? **1**, 114
Picture: **1**, 114

Turtle Dove. A bird belonging to the pigeon family. It stays in parts of England and Wales during the summer.
Colour Plate: **1**, *between* 160 and 161 (Plate 3)

Tuscany is a district of Central Italy famous for its many ancient cities, *i.e.*, Florence, Siena and Pisa, **4**, 151, 364

Tuskar Rock, with its lighthouse, is about five miles off the South Wexford coast, Eire.

Tusks are really long pointed teeth and occur in the elephant and walrus, as they did in certain prehistoric animals. The tusks of an elephant may be 8 or 9 ft. in length and weigh over 200 lb. They are the source of ivory, **1**, 66

Tutankhamen was the last king of the eighteenth Egyptian dynasty. He reigned from 1358 to 1353 B.C. His tomb, containing important treasures and records, was discovered in 1922, **2**, 401; **4**, 296; **9**, 10
Photo-tone Supplement: Treasures of the Past, **9**, *between* 16 and 17

T.V.A. These initials stand for Tennessee Valley Authority (*q v.*).

Tweed. A river of south-east Scotland nearly 100 miles in length. It flows past Melrose and forms the boundary between England and Scotland, entering the North Sea at Berwick.
Pictures: **3**, 109, 111

Tweeddale is a name sometimes given to Peeblesshire.

Tweedmouth. A seaport and town of Northumberland adjacent to Berwick-on-Tweed.

Tweedsmuir, Lord. See *Buchan, John.*

Tweezers made of metal should always be used when handling rare postage stamps.
Picture: **4**, 408

Twelfth Night is the evening of the twelfth day after Christmas, **9**, 301

Twickenham, on the Thames, is a town of Middlesex and a residential centre of Greater London. Many famous people have lived at Twickenham, and here international Rugby football matches are played.
Picture. The Thames Near Twickenham, **7**, 76

Twins, The. Name of one of the geysers or natural hot springs of New Zealand, **3**, 260

Twitch. Name sometimes given to Couch Grass (*q v.*).

Twite. A moorland bird sometimes called the Mountain Linnet as it is often found on heather-covered uplands. It can be distinguished from the true linnet by the absence of red on head and breast, and is a darker bird with longer tail, giving it a more slender appearance. It is a resident on northern moors in Britain.

Tyler, Wat. A rebel against authority. He led a band of peasants to London and challenged King Richard II (1381). He was killed by the Lord Mayor of the city, **2**, 127, 404
Picture: **2**, 127

Tyndale, William (*c.* 1492–1536). A clergyman who translated the Holy Bible into English. He was seized at Antwerp and, condemned as a heretic, was burned at the stake, **2**, 159, 406

Tyne. A river which rises in the Cheviot Hills. It has Newcastle, Gateshead, Wallsend and other large towns upon its banks, **3**, 80
between the Tyne and Solway Firth runs Hadrian's Wall, **2**, 403

Tynemouth (Northumberland) is a shipbuilding and fishery centre at the mouth of the River Tyne, **3**, 81

Tynwald. See *Court of Tynwald.*

Type-Metal, used in the process of printing, is a mixture of lead, tin and antimony, **6**, 135

Typewriter. A machine for writing in characters resembling print. The first practical typewriter was invented by Charles Thurber in 1843, but the machine eventually produced by Charles Latham Sholes and improved by E. Remington & Sons of Ilion, New York, was the first to be put on the market in 1874.

Typhoon is the name given to a storm of hurricane force often encountered in the China Seas, **5**, 24

Tyrannosaurus, a prehistoric monster, the largest flesh-eating creature known to science.
Picture **1**, 19

Tyrant. Name given in ancient days to an absolute ruler, **2**, 10

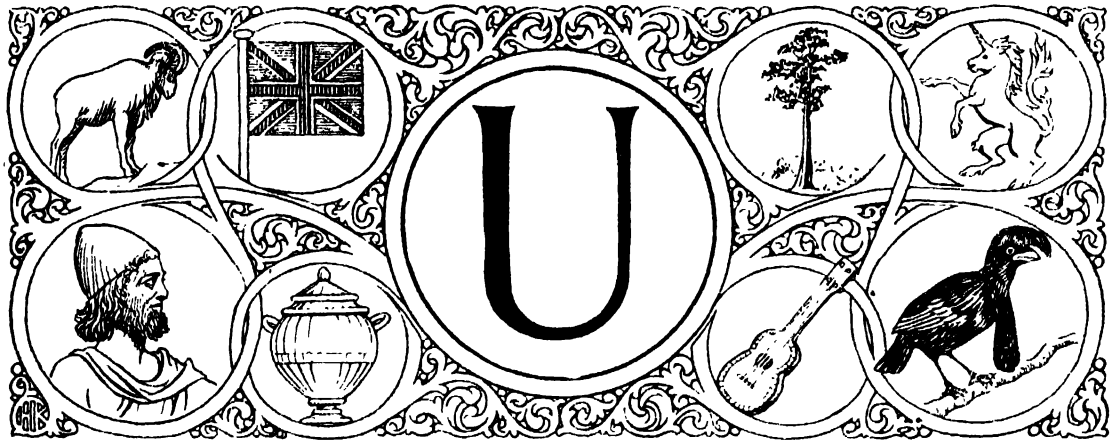
Tyre. The rubber hoops placed round the wheels of motor-cars, bicycles and other road vehicles. The rubber pneumatic tyre was first used for bicycles by J. B. Dunlop in 1888. The manufacture of pneumatic tyres is now a great industry, **6**, 328
Pictures: Rubber for Motor Car Tyres, **6**, 324
Two Stages in Tyre Manufacture, **6**, 325
Laying the Thread, **6**, 326
Taking Out a Vulcanised Tyre, **6**, 327
A Battery of Tyre-building Machines, **6**, 328

Tyre. A famous city of the ancient world and one of the centres of the Phœnicians. It was destroyed by Alexander the Great, but there is still a city on this site on the Syrian coast, **4**, 174; **9**, 17, 18

Tyree is an island of the Inner Hebrides.

Tyrol is the name of a district of Austria dominated by the Alpine Mountains. That part of the Alps known as the Tyrol is found in Austria and Italy.
Pictures: In the Austrian Tyrol, **4**, 3
Innsbruck, the Tyrolean Gateway to Austria, **4**, 88
In the Tyrol of Austria, **4**, 89

Tyrone is a county of Northern Ireland. It is an agricultural district, the capital being Omagh.



U is the twenty-first letter of our alphabet, and the last of the five vowels. The original sound of the letter in Anglo-Saxon—as in most European languages now—was oo : and we still so pronounce it in many words, among them "rule" and "June."

The Roman V represented both our V and our U, as being easy to carve on stone ; and not until the seventeenth century did U definitely become one of our 26 letters.

In chemistry, U is the symbol for the element uranium. The letter is an abbreviation for various words in U.S.A. (United States of America) and U.D.C. (Urban District Council).

Uakari is the name of a small American monkey. It is usually found in dense woodland and has a short tail. There are three species known as the red-faced, the bald, and the black-head, which indicates their distinctive points.

Uaxactum is a place in North Guatemala (South America) where the oldest dated monument, believed to have been built about A.D. 50, has been found 9, 28

U-boat. A name for any German submarine derived from the German word for submarine (*unterseeboot*), 2, 239; 8, 12

Udaipur is a state in the United State of Rajasthan which is part of the Indian Union. Its ruling family is the most noble among the Rajputs and the Maharana of Udaipur is the Maharajpramukh of Rajasthan, *i.e.*, he is its president. Udaipur is also called Mewar

Udaipur is the capital of the state, and is noted for the beautiful royal palace on Lake Pichola, 3, 341

Picture. 3, 341

U.D.C. means Urban District Council.

Uganda. A Protectorate of the British Commonwealth of Nations in East Africa. It embraces several Native kingdoms, the most important being that of Buganda. The main crop grown in the protectorate is cotton, but coffee, ivory, hides and skins, sugar, tea, and tobacco are other important products. Of the population of 4,041,027, four millions are African. See *British East Africa*, 3, 369 *et seq.*

Pictures: 3, 370, 373, 375, 378

—visited by King George VI when Duke of York, 2, 244

Ugly Duckling, The. A Fairy Story, 5, 311

Uintatheres. Ponderous prehistoric animals with dagger-like fangs.

Picture. 1, 18

Uist is the name given to two islands of the Outer Hebrides. They are North Uist and South Uist, 3, 140

Picture: 3, 137

Ultenhage. A large industrial town of Cape Province, Union of South Africa. It is the centre of a fruit-growing district.

Ujiji is a town of Tanganyika Territory on the shores of Lake Tanganyika. It was here that Stanley met Livingstone. It is a railway centre, 2, 336

Picture: A Most Historic Meeting, 2, 336

U.K. means United Kingdom

Ukraine. A large republic of the Soviet Union. Its fertile soil makes it a great centre of food production and it is watered by the Dnieper, Dniester, Bug and other rivers. In the Donetz Valley are important coalfields. Kharkov, with nearly a million inhabitants, is the largest industrial centre of the Ukraine. Kiev is the capital. There are some 28,000 collective and state farms, 4, 112

invaded by Germany (1941), 2, 252

Pictures. The Dnieper Dam, 4, 105

A Maize Crop in the Ukraine, 4, 109

Ukrainian Harvest, 4, 121

Grain from the Collective Farm, 4, 122

Ukulele. A musical instrument, similar to a small guitar. It is used by the Hawaiian islanders and has become popular in America and Britain. (*p.h.*)

Ulan-Ude. An important town of the Soviet Union, with a population of over 129,000, on the trans-Siberian railway about 100 miles east of Lake Baikal.

Picture: 4, 109

Ullswater is a lake of the English Lake District. It is some eight miles long and lies in Cumberland and Westmorland, 3, 90

Ulm is a city of Wurtemberg, Germany, and stands on the River Danube. In 1805, the Austrians surrendered here to Napoleon, 2, 200; 4, 88

Ulster is one of the four provinces of Ireland. Of its nine counties, six are in Northern Ireland and three in Eire, 3, 146 *et seq.*

Picture: Lurigedan's Massive Bulk, 3, 150

Ult. means *ultimo*. It refers to the *last*. Writing in February, a reference to the 18th ult. would mean the 18th day of the preceding January.

Ulundi was the name of a battle in the Zulu War of 1879 in which the Zulus were finally defeated, 3, 310

Ulysses. Name of a Greek hero, also known as Odysseus, 7, 2. (*p.h.*)

Umbelliferous Plants, of which the carrot is an example, bear umbels, *i.e.*, a blossom with many stalks each producing a flower, branching from a common centre not unlike an umbrella.

Umbra is the name given to the dark part of sun-spots, 8, 121

—and to the central, dark part of shadows, 8, 128

Umbrella means "a little shade." First used many centuries ago in the East the umbrella was introduced into England by Jonas Hanway, who died in 1786, 9, 358

Umbrella Bird. A crow-like bird of South America with a crest on its head resembling an umbrella. (*p.h.*)

Umbria is a large district of central Italy.

Umea is a port of northern Sweden near which are the sawmills of Sandviken.

Picture: 4, 36

Umgeni. A river of Natal Province in the Union of South Africa On its course are the beautiful Howick Falls.

Picture: 3, 309

Una and the Faithful Lion. A Tale from the Faerie Queen, 5, 401

Uncompahgre. A river of south-west Colorado, U.S.A., used for a vast irrigation scheme, 5, 84

Underwing Moth. A variety of moth including several different kinds, such as the Red Underwing, Yellow Underwing, etc., 8, 282

Special Colour Supplement: British Moths, 8, *between* 288 and 289

Underwriter. A person who insures a ship or other property against loss; he underwrites his name to the conditions of the insurance policy, 9, 356

Unesco stands for the United Nations Educational, Scientific and Cultural Organisation founded by the United Nations after the end of the Second World War. Its main objects are to establish the Five Freedoms by educational methods and the exchange of ideas among the nations. Its permanent headquarters are in Paris. Dr. Julian Huxley became its first director-general.

Unfinished Symphony, The. Written by Franz Schubert, this is one of the most famous musical pieces in the world, **7**, 171

The Opening Score, **7**, 169

Unicorn. An animal resembling a horse with a single long slanting horn on its forehead. It was said to inhabit India but no proof of its existence has ever been found. It appears in heraldry, including the royal arms of Scotland. (*p.h.*)

Unicorn, Sea. Name given to the *Narwhal* (*q.v.*).

Uniform. Dress of one pattern or colour worn by persons belonging to the same body or service, e.g., soldiers, sailors, Royal Air Force, police, nurses, etc.

Although there were cases of certain bodies wearing similar dress before the seventeenth century it was not until that period that any real attempt was made to have a distinctive type of dress for all persons belonging to the same service. Red, with regimental facings of various colours, became the uniform of Cromwell's New Model Army, and since then the military uniform has shown remarkable variety.

Naval uniform, both in Britain and elsewhere, has shown much less change. Actually it was not till 1857 that a regular uniform for the Royal Navy became official although custom had decreed and captains often ordered a form of uniform for the men aboard the ships of the Navy.

Uniformed police really date from Peel's Act of 1829 though this applied mainly to London until County Police were inaugurated in 1835.

Picture. Sailor of 1845, **8**, 7

Photo-tone Supplement. Men Who Maintain Our Laws, **9**, *between* 80 and 81

Special Colour Supplement: British Uniforms, **9**, *between* 384 and 385

Union, Act of (1707). Brought England and Scotland, which were already ruled by one sovereign, under one Parliament meeting in Westminster, **2**, 178, 410

Picture: When England and Scotland Were United, **2**, 178

Union Castle Line was founded as the Castle Line in 1862 to run steamships from Liverpool to Calcutta. It was amalgamated in 1900 with the Union Steamship Company, an older line founded in 1853, **8**, 32

Union Jack. Name of the British National Flag. It is made up of the flags of St. George (England), St. Andrew (Scotland) and St. Patrick (Ireland), **9**, 320. (*p.h.*)

Colour Plate: Some National Flags, **4**, *facing* 293

Union of South Africa. See *South Africa, Union of*

Union of Soviet Socialist Republics (*abbrev.* U.S.S.R.). See *Russia.*

Union Pacific Railway was the first line to cross the American continent. It was completed in 1869, **4**, 263; **5**, 134

Unique means unmatched; having no like. The duck-billed platypus of Australia is unique among animals

United Empire Loyalists were colonists of the original thirteen British colonies in America who remained loyal to Britain after the War of Independence. About 40,000 of them moved into Canada after Britain's defeat, **3**, 157

United Kingdom included England, Scotland, Wales and Ireland until 1922 when the Irish Free State was brought into being. Today the term United Kingdom means England, Scotland, Wales and the six counties of Northern Ireland. The remainder of the country of Ireland is now known as Eire and became the Republic of Ireland at the end of 1948.

United Nations Organisation is an association of countries working for peace and is the successor of the League of Nations (*q.v.*). The Organisation began with the fifty states who signed its charter at San Francisco in 1945, but other states have since been admitted. Its headquarters is at present at Lake Success, New York, U.S.A. (*Abbrev.* UNO), **2**, 258, 260, 413 *et seq.*; **9**, 329

Pictures: **2**, 259; **4**, 11; **7**, 334

United States of America. This great federal republic is situated between the Atlantic and Pacific Oceans, with Canada to its north and Mexico to its south. Its population of more than 140 millions includes peoples of many different races, especially Negroes of whom there were more than 12,500,000 in 1940. There are 48 states in the republic which has also a number of outlying territories such as Alaska and Hawaii. Washington is the capital, **4**, 261 *et seq.*, 387, 388

—Washington the first President, **2**, 195

See also *U.S.A. Constitution.*

Pictorial Map: **4**, 290 and 291

Photo-tone Supplement. United States of America, **4**, *between* 272 and 273

Uni-Valve. A shellfish or mollusc having only one shell, such as the Limpet, **1**, 227

Universal Postal Union was founded at Berne, Switzerland, by the Postal Convention of 1874. It was extended and improved by Postal Congresses held in different countries. It comprises all countries in the world except Nepal though certain countries have been temporarily suspended from the privileges of membership. In effect the Union establishes a single postal territory for the exchange of mail among all its members. The 75th anniversary was celebrated in 1949 by the issue of special stamps by nearly all the countries of the Union.

University. This place of learning may be defined as an institution designed for the instruction or examination or both of adult students in all or many of the more important branches of learning. It may consist of a single college or of a group of colleges, and it usually has a proportion of its students in residence. The different departments of a University are known as "faculties," as for instance the faculties of arts, medicine, science, theology, and degrees are confined in each faculty, Bachelor of Arts (B.A.), Bachelor of Science (B.Sc.), and so on.

The Middle Ages saw the rise of many famous universities in Europe. One of the earliest and best-known was that at Paris, on which were modelled our own Oxford and Cambridge Universities, founded in the thirteenth century. During the next century or two were founded St. Andrews, Glasgow, Aberdeen and Edinburgh. The more modern foundations in Great Britain are Birmingham, Bristol, Durham, Manchester, Leeds, Liverpool, London, Reading, Sheffield and Wales. Some of these Universities relate a portion of their activities to the character of the local industries. Another University is in course of provision near Stoke-on-Trent. London University has a unique character. Its numerous "schools" are found in different parts of London, although it has a large central nucleus. It covers a wide range of studies and includes in its "schools" special institutions such as the School of Tropical Medicine, the School of Oriental and African Studies, and the Lister Institute.

The British Universities are independent institutions, but receive monetary aid from the State and some local education authorities, **9**, 319

See also *Oxford, Cambridge*, etc.

University College is the oldest college of Oxford University and tradition ascribes its origin to Alfred the Great, and it was certainly in existence before 1249.

Both London and Durham also have University Colleges, each the oldest at these two universities.

Unknown Land of the South was the way in which the old explorers and map-makers described the undiscovered continent of Australia, **3**, 199

Unknown Warrior. Name given to the bones of a British soldier disinterred from a cemetery in France and buried in Westminster Abbey in memory of the War of 1914-18.

U.N.R.R.A. These initials stand for United Nations Relief and Rehabilitation Association. This was established in 1943 and provided emergency supplies and services for Allied countries which, as a result of the war, could not provide these from their own resources. On the completion of this task the organisation came to an end, **2**, 413

Untouchables is the name given to a caste of Hindus. They have no dealings with anyone outside their own class. Under the draft Constitution of the Dominion of India, "Untouchability" was to be abolished and progress is being made towards this end, **3**, 315, 319

Upas Tree. A tree which grows in Java. From a preparation made out of the sap natives formerly used to poison the tips of their arrows. (*p.h.*)

Upcast Shaft. Name given to one shaft of a coalmine. Up through this shaft foul air from the workings is drawn, **6**, 12

Upholsterer. A person who provides carpets and hangings and furnishes chairs, sofas, etc., with padding and covers.

Upper Thames Basin is the name given to the stretch of country which includes the plain of Oxford, **3**, 22

Upper Volta. See *West Africa, French.*

Uppingham is a small town of Rutlandshire. It is famous for its School, founded 1584

Upsala is an ancient city of Sweden. Here Linnæus, the great botanist, made his home.

Upsetting is a term used in basket-making, **8**, 392
Pictures: **8**, 393, 394

Ur See *Ur of the Chaldees.*

Ural Mountains. Name of a range upwards of 1,500 miles in length. Broadly, they may be said to divide Europe and Asia. They are in the territory of the Soviet Union and are now an important region of that country, being very rich in mineral deposits, **4**, 117 *et seq.*

Uranium is one of the elements (symbol U) and is a lustrous white metal found in pitchblende. In recent years it has become of great importance in the production of atomic energy, **7**, 403

Uranus. Name of one of the nine planets which was first discovered by William Herschel. It is 1,782,000,000 miles distant from the sun; 32,400 miles in diameter, and has four satellites, **8**, 155

Urban District Council. A body of men and women elected by the voters in each "urban district" to carry out certain duties of local government relating to public health, housing, education, roads, sewerage and other matters, **9**, 66

Urchin, Sea. See *Sea Urchin.*

Urdaneta was an Augustinian friar who accompanied Legaspi, the Spanish conqueror of the Philippines. The friar set up the first Roman Catholic mission in the islands.
Picture: **4**, 211

Uri. A canton or province of Switzerland and one of the oldest in the Confederation. It joined with two other cantons, Schwyz and Lower Unterwalden, in 1291, **4**, 56

Urial. Name of a large wild sheep found in parts of India. It has very massive horns. (*p.h.*)

Urn. A vase made of clay, glass, stone or metal, usually having an egg-shaped body on a pedestal base. The modern tea urn retains a similar shape to those made in ancient times (*p.h.*)

Ur of the Chaldees is a place in Iraq containing the remains of former civilisations. It was a city of the plains associated with Abraham, **4**, 199; **9**, 6, 12
Pictures: Treasures from Tombs in Ur, **9**, 7
A Mosaic from Ur, **9**, 7

Ursa Major and Ursa Minor are star groups or constellations.

Ursula, St. See *St. Ursula.*

Ursulines. A Roman Catholic religious order for women, founded in 1537 and renowned since then for its educational work among girls, one of the main objects of its founder.

Uruguay is a republic of South America. It is primarily a farming country with stock-raising as its most important industry. Montevideo City is the capital. Its population numbers more than 2 millions, **4**, 317, 330, 393
Picture: **4**, 336

Uruj of the Red Beard was a famous Barbary corsair, or pirate. He died in 1518, **4**, 166

U.S.A. Constitution. The United States of America form what is known as a Federal Republic. Each of the 48 States has its own Parliament and is independent for certain purposes, but there is also a Federal Government which has jurisdiction over the whole of the United States for certain purposes defined in the American Constitution. The President of the United States is appointed by a special process of election in which the whole country joins. The Federal Government under the President consists of two "Chambers," the House of Representatives elected by the whole of the voters, and the Senate, consisting of two members appointed by each State, **9**, 42

Usambara Mountains are in Tanganyika Territory and extend for about 75 miles (150 miles, if the offshoot range of the Pare Mountains is included) west of the port and railway terminal of Tanga in a north-westerly direction, **3**, 374

Usbek (or Uzbekistan) is the name of a republic in Asia, part of the Soviet Union. Its capital is now Tashkent, largest city of Central Asia. Samarkand (Zarafshan) was the capital until recent years.

Ushant is an island at the western end of the Brittany coast of France.

Ushuaia is the chief town of the Argentine part of Tierra del Fuego. It stands on the bay of the same name.
Picture: **4**, 335

Usine Sainte Madeleine is a sugar factory of Trinidad in the British West Indies. It is one of the largest in the world, **3**, 398

Usk. A river of Monmouthshire. It runs through Newport (Mon.) to the Bristol Channel.

Usk. A small town of Monmouthshire with agricultural and fishery interests. It has a picturesque ruined castle.

Uspallata Pass is in the Andes in the Argentine at a height of more than 12,000 ft. above sea level, **4**, 321

U.S.S.R. These initials stand for Union of Soviet Socialist Republics. See *Russia.*

Utah is one of the western states of the U.S.A. and is a centre of gold mining. It also has agricultural interests. Salt Lake City is the state capital.
Pictorial Map. **4**, 290

Uther Pendragon, in the legends, was a King of Britain and the father of King Arthur, **5**, 383

Utica is a city of the State of New York, U.S.A. It stands on the Mohawk River.

Uto is the name of a famous lighthouse in the Baltic at the Approaches to Finland, **4**, 48

Utopia was the name given by Sir Thomas More (*q.v.*) to the imaginary island commonwealth in his book *Utopia* written (in Latin) in 1516. It was an ideal state, based on the idea of common ownership of all goods. From this work comes the adjective Utopian, meaning any ideal or desirable reform which is, however, impracticable.

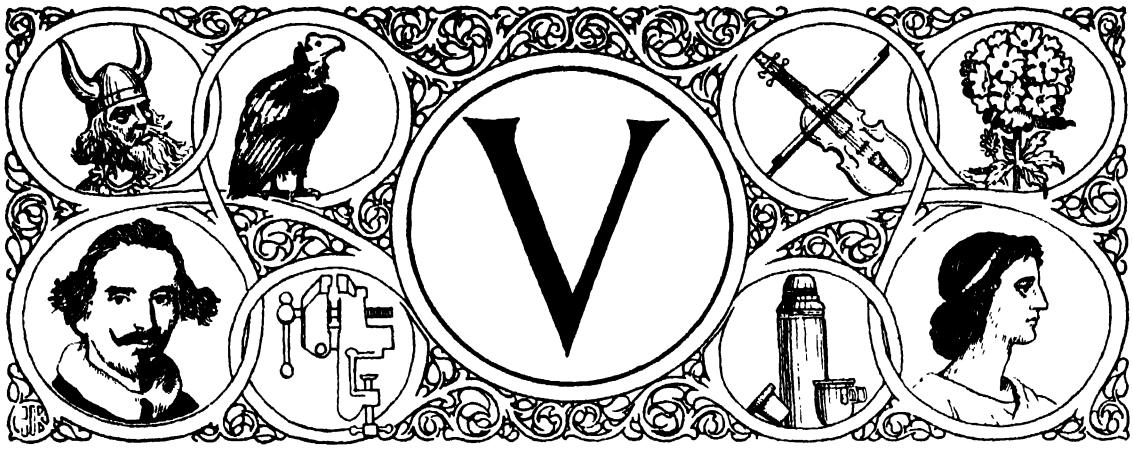
Uttoxeter. A market town of Staffordshire, 15 miles from Stafford and near the River Dove. It was made a borough about 1200 and its grammar school dates from 1558. Fairs and markets made it a place of considerable importance until about 1800.

Utrecht is a city of Holland, famous for its cathedral and carillon of bells. It has woollen and artificial silk factories, **4**, 31
Picture. **4**, 32

Utrecht, Treaty of (1713) This treaty ended the War of the Spanish Succession and gave Britain Gibraltar, Minorca, Nova Scotia and Newfoundland, **2**, 178, 408

Uxbridge is a town of Middlesex, with a history going back to the time of Alfred the Great. Here Charles I opened negotiations with the Parliamentarians at the Treaty House, which still exists
Uxbridge stands on the River Colne and is now largely a residential district for workers in Greater London.

Uzbekistan. See *Usbek.*



V is the twenty-second letter of our alphabet, and one of the spirants, or breathing letters. It is closely related to F, being the softer form of the sound of which F is the harder, or more explosive, form. We may note that a word ending in F, has the F changed into V in the plural ; as calf, calves. We have already noticed, under U, its connection with that letter.

The Romans pronounced it W, and at one period it was frequently pronounced in that way in England. The Romans also used it to represent the number five or fifth. A beloved king was George V. In chemistry, V stands for the element vanadium. The capital is an abbreviation in V.C. (Victoria Cross), and the small letter stands for the *Latin* versus = against, in statements of lawsuits or matches between teams in sports and games.

Vaal is a river of South Africa forming the boundary between the Transvaal and the Orange Free State. After a course of more than 700 miles, it joins the Orange River, 3, 286

Vaccination is the term popularly applied to protective inoculation against small-pox. Certain forms of vaccination were introduced into England by Lady Mary Montagu from Turkey, but it was Dr. Edward Jenner who first applied the much safer method of vaccination by inoculating a boy with a much milder disease, cow-pox, which renders a person so treated almost completely immune for five or six years and has considerable protective effects for many more years afterwards, 7, 366

Vachell, Horace Annesley (born 1861), Playwright and novelist. He wrote the books *The Hill* and *Fishpingle* and the play *Quinney's*, 7, 272

Vacuum. A space containing no matter; a space from which air has been almost entirely removed.

—how a vacuum brake acts, 9, 304

Vacuum Flask, also known as a thermos flask, has the property of keeping its contents hot—or cool, 9, 384. (*p.h.*)

Picture: 5, 88

V.A.D. stands for Voluntary Aid Detachment, a branch of the British Red Cross Society.

Vadstena is a town of Sweden on the banks of Lake Wetter. It is famous for its castle.

Picture: 4, 38

Vaduz is the chief town of the small principality of Liechtenstein, between Switzerland and Austria, 4, 168

Valdai Hills. Name of a range in the Soviet Union. Here is the source of the great River Volga.

Valencia is a province of Spain and has a capital of the same name, a town with mills in which the silk of millions of silkworms is manufactured, 4, 136

Valenciennes. A town of northern France, centre of a rich coalfield. It stands on the River Scheldt and was in days gone by famous for its lace.

Valentia is an island off the coast of County Kerry, Eire. It is the terminal point of Atlantic cables.

Valentine, Saint. A priest who was martyred about A.D. 270. His festival falls on February 14th, but there is nothing to connect him with the custom of sending Valentines.

Vale of Cushendall. See *Cushendall.*

Valerian. Name of a popular perennial plant which grows wild in some parts of the country. It is used in the making of medicines, 1, 333

Valhalla. This was the name given by the old Norsemen to the " Home of the Gods," whither all heroes, killed on the battlefield, were believed to go. The term is now used to describe any place where the great persons of a nation are buried, *e.g.* Westminster Abbey, 3, 7

Valiant. The ship in which H.R.H. the Duke of Edinburgh served at the battle of Cape Matapan (*q.v.*), 2, 263

Valladolid is one of the provinces of Spain, with an ancient capital of the same name, 2, 350; 4, 135

Valletta, on the island of Malta, is the capital of that colony. It possesses many ancient buildings dating from the days of the Knights of St. John, 3, 387

Pictures: 3, 389

Colour Plate: In the Grand Harbour at Valletta, Malta, 3, *facing* 384

Valley of Diamonds is the name given to the district round Kimberley, Cape Province, 3, 293

Valley of a Thousand Hills is the name of a beauty spot between Durban and Pietermaritzburg in the Natal province of the Union of South Africa.

Picture: 3, 305

Vallombrosa. A pleasure resort 21 miles from Florence, Italy. Its beauty inspired Milton's famous lines on its autumnal leaves. A meteorological station was founded here in 1654.

Valparaiso is the principal seaport of Chile and stands facing the Pacific. It is a great commercial centre, 2, 346; 4, 320

Valse is the French word for the waltz dance.

Vampire. According to the folklore of Slavonic peoples, particularly those of South-eastern Europe, the vampire is a demon that appears at night which takes the blood of sleeping men. Certain bats in South America have been given the name as they live on the blood of other animals.

Vampire Bat. An animal found in Brazil by the naturalist, Bates, 2, 340

Vanadium is a rare white metal, very difficult to melt, one of the elements (symbol V). Vanadium steel, which contains a small proportion of it, is very tough, and on this account is used for axles, pistons, connecting rods, gear wheels, springs and other parts which are subjected to frequently repeated shocks.

Vancouver is a town and port of British Columbia, the Pacific terminal of the Canadian Pacific and Canadian National Railways. It has vast elevators for storing wheat, 3, 169, 196

(2) A city of Washington, U.S.A.

Pictures: Lumber Awaiting Shipment, 3, 173

Aerial View of Vancouver, 3, 187

Vancouver, George (1758–98). A British sailor who was with Captain Cook on his voyage round the world. He surveyed the north-west coast of America, and Vancouver Island is named after him.

Vancouver Island is found off the southern coast of British Columbia. Its capital is Victoria.
Picture: **3**, 156
Vandals. A Germanic tribe who sacked Rome in A.D. 455, **2**, 403
Vanderdecken is the name of the captain of the *Flying Dutchman* said to be seen in the waters round the Cape of Good Hope. Its appearance foretells disaster in a superstition of the sea, **3**, 281; **8**, 48
Van der Stel, Governor. A Dutchman of the Cape Colony who built the homestead of Groot Constantia in 1685.
Picture: **3**, 281
Van Diemen, Antony (1593 1645). A Dutchman, he became Governor-General of the Dutch possessions in the East. He sent Abel Tasman on the voyage which resulted in the discovery of Tasmania, known at first as Van Diemen's Land, **3**, 202
—Tasman named Cape Maria Van Diemen after his daughter, **3**, 250
Picture: In the Bay of Adventure, **2**, 315
Van Dyck, Sir Anthony (1599-1641) A Flemish portrait painter, he came to London in 1632, **7**, 44
Pictures: The Children of King Charles I, **7**, 40
Charles I by Van Dyck, **7**, 42
Vanguard, H.M.S. Name of the largest battleship in the British Navy. She was launched on the Clyde by the Queen when she was Princess Elizabeth, November 30th, 1944. It was in the *Vanguard* that the Royal Family voyaged to Cape Town for their tour of South Africa in 1947, **2**, 259
Picture: Mightiest Battleship and Largest Liner, **8**, 20
Colour Plate Britain's Largest Battleship, **8**, *facing* 64
Vanilla, used as a flavouring material, is made from a species of orchid growing in Central America. The seed-pods are 6 in. long, **1**, 368
Varanasi, meaning the bright-robed daughter of Ganga, is an old Indian name for Benares, **3**, 354
Vardar is the name of a river of the Balkans. It was the scene of heavy fighting in the War of 1914-18, **2**, 240
Vardo is a port at the north-eastern tip of Norway, **2**, 304
Varro. Leader of the Roman legions at the Battle of Cannæ, **2**, 69
Vasa. An important iron and steel town of Finland. Its name can also be spelt Vassa, **4**, 50
Vasari, Giorgio. Himself an artist, he wrote the lives of the early Italian painters, **7**, 8
Vasco da Gama. See *Gama, Vasco da.*
Vasterbron is the name of the West Bridge in Stockholm, the Swedish capital.
Picture: **4**, 44
Vatican City. That part of Rome containing the papal palace. It is the home of the head of the Roman Catholic Church throughout the world and is an independent state, **4**, 152, 172
Picture: **4**, 172
Vaughan Williams. See *Williams, Dr. Ralph Vaughan.*
V.C. means Victoria Cross.
Veddahs. This is the name of the aboriginal people of the island of Ceylon. There are very few of them now and they live mostly in the forests of the island, **3**, 361, 402
VE Day. Name given to May 8th, 1945, the day on which the Allies celebrated victory in Europe, the end of the war in the West having been announced on the day before. The war against Japan continued but its end was announced at midnight on June 14th. The first of the two VJ Days (victory over Japan) was celebrated on August 15th, 1945. Victory in all theatres of war was celebrated in London on June 8th, 1946, with a great Allied Parade in London, **2**, 256 *et seq.*
Pictures. Victory Day 1946, **2**, 415
The Hour and the Man, **10**, 79
Vega is the name of a bright, blue star in the constellation of Lyra, twenty-one light-years from the earth, **8**, 170
Vegetable Octopus. A plant of Central America which can hold any creature coming within reach of its tentacles, **1**, 342
Vehicle. A carriage of any kind used on roads or rails. Wheelbarrows, carts and wagons are vehicles that cannot move themselves, motor cars and motor lorries are self-propelling vehicles
The use of horse-drawn vehicles for travelling was not general in England until the seventeenth century, and not until about 1804 was the elliptical spring introduced to lessen the jolting on the rough roads of the time.
Picture: **10**, 391
Veil-tailed Goldfish. One of the most beautiful of the species, **1**, 225
Picture: **1**, 224
Veins are the pipes which carry the blood in our bodies to the heart, **8**, 214
Velasquez, Diego (1599–1660). One of the greatest of Spanish painters, he excelled in portraits, **7**, 55. (*p.h.*)
Pictures: The Surrender of Breda, **7**, 56
The Maids of Honour, **7**, 57
Veld. See *High Veld.*
Vellum is writing parchment made from the skins of calves, kids or lambs, **6**, 100
Velvet Fiddler Crab. Name given to a variety of crab.
Picture: **1**, 236
Venerable Bede. See *Bede.*
Venezuela is a republic in the north of South America. It is an agricultural country with important timber resources. It exports more petroleum than any other country in the world. Its population numbers over 5 millions and Caracas is the capital, **4**, 330, 394
Pictures: **4**, 328, 329; **6**, 306, 307, 309, 312
Venice. A province of Italy and the chief city of that province. It was once an independent and powerful state and was called "Queen of the Adriatic." The city seaport of Venice is built upon a group of islands at the extreme north of the Adriatic Sea. Canals serve as streets and roads and everywhere there are buildings to remind one of Venice's past greatness. Venetian glass is the famous local product, **4** 150, 156
—the Polos, great thirteenth century explorers, were natives of Venice, **2**, 267
Pictures: On the Grand Canal, Venice, **4**, 150
A City Constructed in the Sea, **4**, 151
St. Mark's, **7**, 317
Photo-tone Supplement. Seaports Old and New, **4**, *between* 112 and 113.
Colour Plate: St. Mark's Cathedral and Campanile, Venice, **4**, *facing* 61
Venlo. A town of Holland on the German border and the site of important radio factories. It was badly damaged during the Second World War, **4**, 31
Ventimiglia is a town and seaport of the Italian Riviera
Ventnor is one of the resorts of the Isle of Wight situated on the southern shore, **3**, 38
Ventricle. One of the two lower chambers of the heart. The right ventricle forces blood through the lungs and back to the heart. The left ventricle drives the purified blood through the arteries into all parts of the body except the lungs.
Ventspils is one of the main ports of Latvia, the Baltic State that has once more become a part of Russia, **4**, 52
Venus, the romantic "Evening Star," is one of the nine planets of the solar system, and, apart from the sun and moon, is the brightest object in the sky. It is somewhat smaller than the earth, and the second in order of distance from the sun, being some 67 million miles away. It has a diameter of about 7,700 miles, and revolves round the sun once in 225 days. The Greeks at one time regarded it as two planets, its morning appearance being named "Phosphorus," and its evening appearance "Hesperus," **2**, 310, **8**, 140
Pictures The Cloudy Planet, **8**, 140
Our Neighbours, **8**, 141
When Venus comes Nearest, **8**, 142
Venus and the Earth Compared, **8**, 142
The Phases of Venus, **8**, 143
The Earth as Seen from Venus, **8**, 146
The Clouds of Venus, **8**, 148
A Rare and Beautiful Sight, **8**, 155
Venus's Fly-trap. A plant found in North America. When touched, the leaves interlock and so imprison a fly, **1**, 340
Picture. **1**, 343
Vera Cruz is a large district of Mexico. Its capital is Jalapa, but it includes the fine town and seaport of Vera Cruz on the Bay of Campeche. It was founded by Cortez in 1519.
Verbena. A familiar garden plant of which there are many varieties in this country and the American tropics. The flowers include a wide range of colours. There are pot verbenas and rock verbenas as well. (*p.h.*)
Vercingetorix was the name of a Gaul chieftain defeated by Julius Cæsar (52 B.C.), **4**, 5
Verde, Cape. See *Cape Verde.*
Verdi, Giuseppe (1813–1901). An Italian composer, he was author of many tuneful operas. *Il Trovatore* is one example, **7**, 184
Picture: **7**, 183

Verdon-Roe, Sir Alliott (born 1877). A British pioneer of aviation, he built and flew his own aeroplane in 1908. He founded A. V. Roe and Co. and built Avro aeroplanes, **5,** 196
Picture: **5,** 198

Verdun is a town of France on the River Meuse. It was the scene of a costly German offensive in the War of 1914–18, **2,** 238

Vere. A place on the British island of Jamaica in the West Indies. The new sugar factory here is the largest of its kind in the British Commonwealth, **3,** 398

Vereeniging, Peace of (1902). Vereeniging is a town of the Transvaal in the Union of South Africa. It has an important steel and coal industry. At this town the peace ending the South African war was prepared. The treaty thus prepared was signed at Pretoria in May of the same year, **2,** 225

Verhaeght, Tobias. One of the masters of Paul Rubens, the great artist, **7,** 39

Vermeer, Johannes (1632–75). A well-known Dutch artist, he was born at Delft, **7,** 52
Pictures: A Masterpiece in Portraiture, **7,** 47
The Work of Johannes Vermeer, **7,** 49

Vermillion is a town of central eastern Alberta. It has come into prominence as one of the new centres of the oil industry in that Canadian province.
Picture: **3,** 192

Vermillion Lake is one of the beautiful lakes in Banff National Park, Alberta, Canada
Picture: **3,** 188

Vermont is one of the New England States of the U.S.A. It is an agricultural state. The capital is Montpelier.
Pictorial Map: **4,** 291

Vernalisation. Scientific method of hastening the earing of cereals and other plants which is being extensively studied by agricultural research workers in different parts of the world.
Pictures: Hastening the Growth of Seeds, **1,** 387

Verne, Jules (1828–1905). Born at Nantes, he was a great writer of imaginative stories and anticipated many modern inventions and discoveries. He travelled to America in the famous ship *Great Eastern,* **7,** 219

Verona is an ancient town of north-east Italy. It was one of the old city states of medieval Italy, **4,** 150

Veronese, Paul (1528–88). An Italian painter, he specialised in religious subjects, **7,** 30
Picture: **7,** 28

Verrazano, Giovanni da. This sixteenth century navigator sailed with Jean Aubert and together they discovered the St. Lawrence River. Later, Verrazano sought the North-West Passage, **2,** 294

Verrochio, Andrea (1435–88). An outstanding Italian sculptor, he was a pupil of Donatello, **7,** 310

Versailles is a historic town about twelve miles from Paris. Its Palace was built by Louis XIV, 1661–83, and here great Peace Treaties have been signed, **4,** 8, 12, 77
Picture: **4,** 9

Versailles, Peace of (1783). This peace marked the end of the War of American Independence. Britain recognised that independence by her peace treaty with the United States; at the same time peace was made with Spain, France, and Holland, **2,** 410

Versailles, Treaty of, was signed in 1919 and officially brought to an end the First World War of 1914–18. It was so called because it was signed in the Palace of Versailles near Paris, **2,** 240
Picture: **4,** 9

Verse, A Children's Treasury of. An Anthology or Collection of Poems, **9,** 85

Verulam, Lord. See *Bacon, Francis.*

Vervain. Name of a wild plant to be found in waste places and at the roadside. It bears lilac-coloured flowers on slender spikes. It is common in southern England but rare in the North.

Verviers is a Belgian woollen manufacturing town to the east of Liège on the banks of the River Vesdre, **4,** 24

Vespasian (A.D. 9–79). A Roman general who became Emperor. He visited Britain.

Vespucci, Amerigo (1451–1512). An Italian navigator, he made many voyages to America and explored the coasts. He gave his Christian name first to Brazil, which appeared as "America" on the maps of the time. Later the name was extended to the continent, **2,** 278

Vesta was the Roman goddess of the hearth and fire. Six Vestal virgins served the goddess, and one of their duties was to keep burning a fire regarded as sacred,
Picture: The House of the Vestals, **9,** 19

Vesuvius. A volcano rising to a height of 4,000 ft. above the Bay of Naples. Ashes from its crater brought ruin to Pompeii and other towns, A.D. 79, **2,** 403, **4,** 152
Pictures: **1,** 46; **4,** 145
Photo-tone Supplement. Seaports Old and New, **4,** *between* 112 and 113

Vetch. A plant of the pea family. Also known as the tare, it produces crops valuable as fodder, **1,** 302
—as it grows in Greenland, **1,** 338
Picture. **1,** 300

Vetch, Bush. See *Bush Vetch*

Vetch, Kidney. See *Lady's Fingers.*

Veterinary Science treats the diseases of domestic animals, and deals with the anatomy, breeding, and relations to man. The Royal College of Veterinary Surgeons, founded in 1844, conducts examinations and grants degrees (M.P.C.V.S. and F.R.C.V.S.), **1,** 394

Veturia, the mother of Coriolanus, **2,** 57
Picture: **2,** 57

Vevey is a town of Switzerland, standing on Lake Geneva, a popular resort for tourists.

Via Appia. These Latin words mean Appian Way (*q.v.*).

Via Dei. These Latin words mean "Road of God" and were used to describe the route by which the old Crusaders fought their way to the Holy City of Jerusalem in the Holy Land. Today, it is possible to trace that route by the castles which the Crusaders built along its length, **4,** 190
Pictures: The Kadifekalasi, **4,** 176
Aleppo, **4,** 175
A Former Guardian of the Crusader Road, **4,** 186

Via Dolorosa, meaning "Street of Pain," is the name given to a narrow street of Jerusalem along which Christ passed bearing the Cross.
Photo-tone Supplement: Scenes in the Holy Land, **4,** *between* 176 and 177

Viaduct. A bridge which carries a railway or road across a valley.
It may consist of a series of masonry arches, or be a number of metal spans resting on piers. See *Bridge.*

Vialidad is the name given to the public system of road maintenance used in El Salvador, **4,** 303

Viborg. Until recently a town and port of Finland and known as Viipuri, Viborg is now one of the chief towns of the Karelo-Finnish Soviet Socialist Republic of the U.S.S.R. (Russia). Near the town are the great falls of Imatra, **4,** 50
Picture. **4,** 49

Viburnum. Name of a large family of trees and shrubs. V. lantana is the wayfaring tree, valued for its red berries, **1,** 306

Vicar of Wakefield. The story that made the reputation of Oliver Goldsmith. Dr Johnson read the manuscript
Picture **7,** 139

Vice. Name given to different tools having two jaws which grip between them the material to be worked. The jaws are tightened or relaxed by a screw or lever. (*p.h.*)

Vicellio, Tiziano. See *Titian*

Viceroy was an officer appointed to represent the sovereign in a dependency. Its use ceased in 1947 when India was granted self-government and two new Dominions were formed

Vichy. A well-known health resort of Central France. It was the seat of the French Government during part of the Second World War.

Vickers-Viking passenger air-liner was the first to be flown with turbo-jet engines.
Picture and Description, **5,** 233

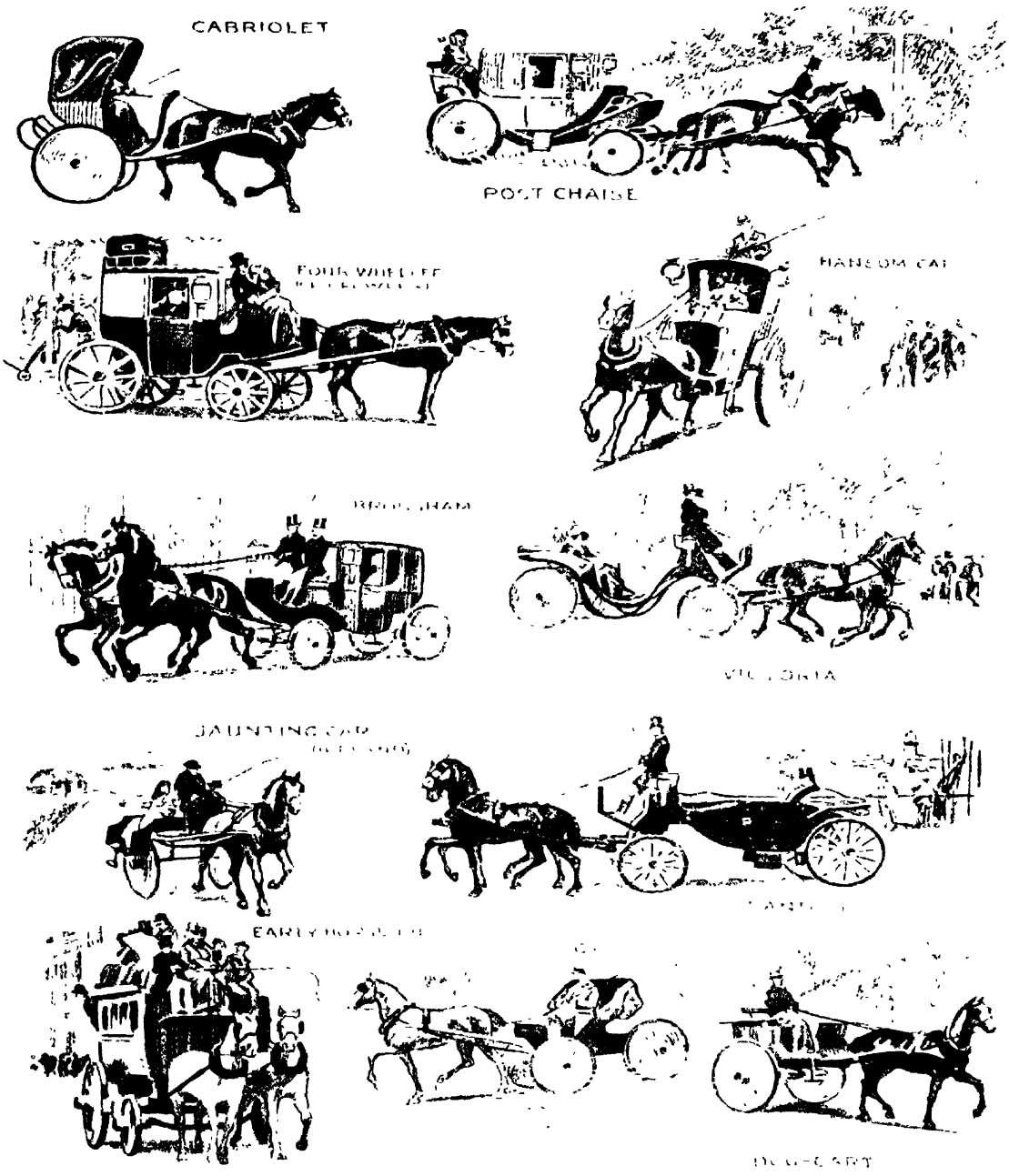
Vickers Viscount is the world's first turbo-prop engined air liner.
Picture and Description: **5,** 231

Victor Emmanuel II (1820–78). King of Piedmont and later of united Italy. His kingdom before the unification of Italy actually consisted of Piedmont, Sardinia, Savoy, and Genoa. He came to the throne in 1849 as King of Sardinia and became King of Italy in 1862, reigning until 1878, **4,** 150.

Victor Emmanuel III (1869–1947). King of Italy. He succeeded to the throne on the assassination of his father, King Humbert I, in 1900. He allowed Mussolini to become virtual ruler of Italy, but co-operated with the Allies from 1943. In 1946 he abdicated.

Victoria (1819–1901). Queen of Great Britain and Empress of India. Married Prince Albert of Saxe-Coburg-Gotha. Her long reign was marked by great commercial progress and

BEFORE THE MOTOR-CAR CAME



Specially drawn for this work

For centuries before the coming of the internal combustion engine, the horse was the only traction power for road transport. The earliest horse-drawn *vehicle* (see p. 380) for hire was the cabriolet shortened to "cab," which came from Paris shortly before the post chaise appeared in England about 1664. The four-wheeled cab, often termed a "growler," as well as the hansom cab, named after its inventor, date back to about 1835, while most of the others appeared on the roads in early Victorian days, though the jaunting car remained peculiar to Ireland.

social reform, 2, 212 *et seq.*, 411 *et seq.*
Pictures: The Royal Family in 1848, 2, 213
Nearly 64 Years Our Queen, 2, 221
At a Royal Marriage Ceremony, 2, 224
All Great-Grandchildren, 2, 245

Victoria. A four-wheeled carriage usually drawn by two horses. First brought from the Continent in 1869, it was named after Queen Victoria.
Picture 10, 391

Victoria is a State of the Commonwealth of Australia. It produces grain and dairy produce and has sheep farms. There is also mineral wealth, including gold and coal, within the State. The State capital is Melbourne The Murray is the principal river, 3, 232
—its early history, 3, 204
Pictures: In Cumberland Valley, Victoria, 3, 201
A Victorian Butter Factory, 3, 208
A Stack of Wheat, 3, 209
Butter in the Cool Stores, 3, 213
Harvesting Wheat, 3, 221
Russell Street, Melbourne, 3, 234
Collins Street, Melbourne, 3, 235
Mount Buffalo National Park, 3, 236
Photo-tone Supplement: Australia, 3, *between* 240 and 241
Pictorial Map 3, 243

Victoria is the capital of the Province of British Columbia, Canada. It is situated on Vancouver Island, 3, 169
Picture: 3, 156

Victoria is the capital of the colony of the Seychelles Islands in the Indian Ocean. It is on the island of Mahé, 3, 388
Picture: 3, 386

Victoria is the name of the largest of the African Lakes, 3,700 ft. above sea level, 3, 369
Picture: 3, 371

Victoria was the name of one of Magellan's ships in his voyage to South America, the first vessel to sail round the world, 2, 283
Picture 2, 285

Victoria and Albert Museum, London. See *South Kensington.*

Victoria Bridge connects the two parts of the city of Brisbane, Queensland. It spans the Brisbane River.

Victoria Cross. The highest decoration for valour awarded to officers and men and women of the Royal Navy, Army and Royal Air Force. It was instituted by Queen Victoria in 1856. It is given for "conspicuous bravery or devotion to duty in the presence of the enemy." The cross is of bronze, bearing the inscription "For Valour."

Victoria Embankment is beside the Thames in London and runs between Blackfriars Bridge and the Houses of Parliament. It was opened in 1870. Its monuments include Cleopatra's Needle.
Picture: 3, 22

Victoria Falls are on the River Zambesi in Rhodesia. The Falls are about 357 ft. in height and almost a mile in width. They were discovered by David Livingstone in 1855, 2, 334; 3, 296 *et seq.*; 5, 49
the Falls discharge 100 million gallons of water a minute, 3, 299
Pictures: 3, 298; 5, 69
Colour Plate: The Victoria Falls in Southern Rhodesia, 3, *facing* 277
Photo-tone Supplement: Roaring Waters, 3, *between* 304 and 305

Victoria Harbour is the fine port of the island of Labuan off the north-west coast of Borneo, 3, 404

Victoria Land. Tract of territory in Antarctica discovered by Sir James Clark Ross, 2, 366, 368
Photo-tone Supplement: In the Polar Regions, 2, *between* 368 and 369

Victoria Regia is the name of a South American water plant, the large rimmed leaves of which will actually support a man.

Victory. Name of Nelson's famous flag-ship during the Battle of Trafalgar in which he lost his life. Reconditioned, she is still at Portsmouth.
Pictures Nelson joins the "Victory," 2, 199
King George VI on board the "Victory," 2, 247

Vicuna. A species of the South American animal, the llama (*q.v.*).

Vienna. The capital of Austria which also ranks as a province of the republic. It stands on the River Danube and has a long history as a centre of fashion and culture. It suffered serious damage during the Second World War, 4, 90, 91

Vienna, Congress of (1814). This was a congress of the great Powers of Europe which met at Vienna to settle the affairs of the Continent after Napoleon had been banished to Elba Its work is seen in the Treaty of Vienna, 2, 206, 410, 4, 123

Vienna, Treaty of (1815) brought peace to Europe after the long wars against France and Napoleon, 2, 208

Viet-Nam Republic. See *Indo-China, Federation of.*

Vifstavarf is a centre of the timber industry with important sawmills in Sweden.
Picture 4, 350

Vigia. A very small harbour on the Para River in Brazil.
Picture. 4, 318

Vigo. An important seaport and town of Spain. It is also a naval station.

Viipuri. See *Viborg*

Vikings was the name given to Scandinavian voyagers and pirates in early times. They came for plunder in the first place but in many cases they were tempted by the more fertile lands of England, Ireland and Normandy and remained to form settlements of their own, 2, 85. (*p.h.*)
Pictures Fashioned after the old Norse Longships, 4, 33
Photo-tone Supplement: Ships Today and Yesterday, 5, *between* 272 and 273

Village. Name given to a small settlement, smaller than a town. In the Middle Ages there were no gates or hedges, each village being divided into three large fields, 2, 114

Village Deep Mine. In the Transvaal, near Johannesburg, it is a goldmine which goes down to a depth of 7,700 ft., 3, 292

Villa Rigea was the name by which the German city of Ulm was known in the days of Charlemagne, 4, 88

Villeins. Name given to the half-enslaved labourers of the fields in England in the Middle Ages, 2, 125

Villeneuve, Pierre Charles (1763–1806). A famous French sailor who became an admiral before he was thirty. Commanded the French fleet at Trafalgar and was taken prisoner.

Vilnius is the capital of Lithuania. Before Lithuania returned to Russia, it was known as Vilna, 4, 52

Vimiera, Battle of (1808). Vimiera, or Vimiero, was a village, north of Lisbon in Portugal. Here Sir Arthur Wellesley defeated the French under Junot, 2, 202

Vimy Ridge is the name of some high ground in the Pas de Calais Department of France a few miles east of Arras. It was captured by Canadians in the War of 1914-18, 2, 239

Vinca. Name of the shade-loving, creeping plant *Periwinkle* (*q.v.*).

Vinci, Leonardo da. See *da Vinci Leonardo.*

Vinegar is obtained by fermenting a kind of beer for malt vinegar or wine or cider for wine vinegar, 9, 414

Vinland was the name given by Vikings to a part of America which they are believed to have discovered in the eleventh century. They chose this name because vines were growing there, 2, 274

Viol. A stringed instrument, played with a bow, and resembling a violin, but with certain differences. There were several types but today the Violone, or double bass viol, is the only one generally used

Viola. Perennial plants of the Violaceæ order, which includes the violet and the pansy The name viola is usually given to the tufted pansy. The pansy has thicker stems and more pointed leaves and is inclined to be straggly; it does not flower quite so freely as the viola

Viola. See *Violin.*

Violet Carpenter Bee. A solitary bee having a black body and violet-coloured wings. It is found in the south of France.

Violet, Sweet. Low-growing perennial plant bearing fragrant blooms.
—one petal may be different from others, 1, 292
See also *Dog Violet, Wood Violet.*

Violin. The violin, and its companions the viola, the violoncello ('cello for short), and the double bass fiddle, are the most important stringed instruments of the orchestra, and the first three are constantly used as solo instruments. Their construction is familiar—the beautiful curving box, the strings and their pegs, and the bridge. The four strings, varying in length according to the player's hand pressure, produce the notes of the scale. The immediate predecessors of the violin family were the viols, and their more distant ancestor was the rebec (*q.v.*), 5, 112; 8, 341. See *Musical Instruments; Orchestra.* (*p.h.*)

Violoncello. This instrument is the bass of the violin (*q.v.*) family.

Viper. The only poisonous snake found in this country. It is about 2 ft. in length, 1, 144
Pictures: 1, 146, 148

Viper's Bugloss. To be found at the roadside and in waste spaces, this

wild plant grows to a height of about 1½ ft. Its stems are covered with spots, and the flowers are bright blue when fully open.

Virgil (Virgilius Maro) (70–19 B.C.). A Roman poet, he wrote the epic *Æneid*, **7**, 122. (*p.h.*)

Virginal. Name of an early form of the musical instrument, the spinet. First made about 1560.
Pictures: **7**, 49

Virginia. One of the Atlantic States of the United States of America, named after Queen Elizabeth. Here the first English settlement was made by a company of London merchants The capital is Richmond, **2**, 146, 155, 190, 195, 406
Pictorial Map: **4**, 291

Virginian Stock is a dwarf-growing hardy annual very useful for edgings, **8**, 278

Virginia Water is an artificial lake in Windsor Great Park on the borders of Surrey and Berkshire It is one of the beauty spots of the Home Counties.

Virgin Islands, once known as the Danish West Indies, lie near the island of Puerto Rico and belong to the U S A. St Thomas is the chief port. Other Virgin Islands are British, **4**, 294

Virgo, the Virgin One of the signs of the Zodiac.

Visconti. The name of a noble Italian family. A member of this family began building the monastery of Certosa di Pavia in the year 1396 in fulfilment of a vow made by his wife.
Picture **4**, 148

Viscose Process is one of the three main methods of making rayon. It is the result of the efforts of British chemists, viz , Bevan, Beadle, Cross, Stearn and Topham, **6**, 347, 348

Vishnu the Preserver is the name of a god in the Hindu religion, **3**, 318

Visigoths. A tribe of barbarians who lived in the part of Europe we now know as Rumania about the year 250 Led by Alaric, they sacked Rome in A D. 410 and later settled in the south-western part of France, **4**, 5

Vistula. A great river of Poland. It rises in the Carpathian Mountains and empties into the Baltic Sea The river is about 650 miles in length. Upon its banks stand the old towns of Thorn, and Warsaw, the Polish capital, **4**, 126
Picture. **4**, 123

Vitamins are substances present in small quantities in the food we eat. Vitamin D is the sunshine vitamin because it can be produced by the action of sun on the skin. Vitamin A helps us to defend our bodies against germs. Vitamin B helps to nourish the nerves and muscles. Vitamin C is found in fresh fruit and vegetables, **7**, 387; **8**, 224; **9**, 408

Viti Levu. The largest of the Fiji Islands of the Pacific. Suva, the capital of Fiji, is on this island, **3**, 391

Vittoria. A city of Spain, in the Basque province. It is famous for the Battle of Vittoria (1813), fought between the British and Portuguese, under Wellington, and the French, the latter being defeated.

Vittoria. Name of one of the early musical composers of Italy, **7**, 157

Vivarium. An artificial home provided for newts, lizards, toads and similar creatures when kept in captivity, **1**, 158

Viz. means *videlicet*, or namely.

Vladimir is an industrial town and region of the Soviet Union in the vicinity of Moscow, **4**, 117

Vladivostock. A town, seaport and naval depot of the Soviet Union. It is in the Far East, on the Sea of Japan, and is a terminus of the Trans-Siberian Railway.

Vlatava. A river of Czechoslovakia on which Prague stands. It flows into the Elbe and is also known as the Moldau.
Picture **4**, 91

Voi. A town of Kenya, on the railway from Mombasa to Nairobi. From here another line runs to the port of Tanga in Tanganyika, **3**, 370

Voisin, Gabriel and Charles, were among the early pioneers of flying in France and founded the first firm for the construction of heavier-than-air flying-machines in 1905. It was upon one of their box-kite type of aircraft that Col. Moore-Brabazon made his first flight in England.
Picture The Voisin Aeroplane, **5**, 181

Volcano. A vent in the earth's crust through which molten rock reaches the surface; it is not necessarily a mountain but usually becomes one in the course of time, **9**, 314
Picture The Volcano, **1**, 45
See also *Atlas Supplement*, end of this Volume

Vole. Family of mice found in many parts of the world. In colour they are brownish or greyish above and white underneath. See *Field Vole* and *Water Vole*.

Volendam, a Dutch fishing village of the Zuyder Zee, **4**, 32
Picture: **4**, 29

Volga. The longest river in Europe, it flows for some 2,400 miles entirely in Russia. It empties into the Caspian Sea, **2**, 271; **4**, 87, 116, 118
Picture **4**, 113

Volscians. A race of people in ancient Italy; conquered by the Romans, **2**, 55

Volt. The unit of electrical pressure. It is the pressure needed to make a current having a volume of one ampere (the unit of volume) pass through a circuit having a resistance of one ohm (the unit of resistance).

Volta, Alessandro (1745–1827) Came of a noble Italian family. Inventor of the voltaic cell which consists of a vessel containing acidulated water in which are immersed zinc and copper connected with a wire.
From his name we get the terms volt and voltage, **7**, 368
Picture: **7**, 371

Volta Redonda is a great iron and steel centre in Brazil, **4**, 324

Voltaire, François Marie Arouet de (1694–1778). A French poet, dramatist and novelist. *La Henriade*, *Candide*, *Zadig* and *Irene* are among his works.
-his writings helped to prepare France for the French Revolution, **4**, 8

Volumnia. Wife of Coriolanus, the Roman exile, **2**, 57

V One. See *Flying Bomb*.

Voortrekker. This was the name given to any Boer taking part in the Great Trek of 1836, **3**, 277

Voroshilovgrad is a region and town of the Ukraine in Soviet Russia. It was formerly known as Lugansk and with its population of over 200,000 is one of the large towns of the Soviet Union.
Picture: **4**, 122

Vortigern, King of Kent Hengist and Horsa came to this country at his request, **2**, 82

Vosges is the name of a chain of mountains on the eastern side of France. There is also a French department similarly named, **4**, 70

Voting by Ballot to ensure secrecy is the method used at parliamentary and municipal elections in Great Britain, **9**, 51, 317
Picture. When Citizens Go To the Poll, **9**, 55

Voting Systems. Under our present system for Parliamentary elections, one member is usually elected in each constituency or district. Where there are three candidates this method sometimes results in a member being elected who has not received a majority of the votes In order to remedy this defect, other methods have been devised, but they have not so far been generally adopted. Two of these methods are the *Alternative Vote* and *Proportional Representation*. The first of these methods was used to elect M.P.s for the Universities, **9**, 54

Vowels, The. A Poem by Jonathan Swift, **9**, 90

Voyageur. This French word means, literally, "traveller." It is used to describe those French colonial traders and adventurers who penetrated the unknown regions of Canada, **3**, 158

Vryburg is a town of the Cape Province of the Union of South Africa, **3**, 294

V Two. See *Rocket Bomb*.

Vulcan is the name given to a planet, believed by some astronomers to be nearer the sun than Mercury, though it has never been seen, **8**, 139

Vulcan, in the myths of ancient Rome, was the god of fire. The Greeks had a similar god named Hephæstus. Vulcan is said to have been the first to hammer iron.

Vulcanisation is the process of making raw rubber more elastic and durable by mixing with it powdered sulphur and heating it or treating it with chemicals.

Vulcanite is the hard form of rubber. It is a non-conductor of electricity.

Vulgate. Name generally given to the Latin translation of the Bible made chiefly by St. Jerome about the end the fourth century.

Vulture. A flesh-eating bird that rends its meat with a sharp, strong bill. Southern Europe, Asia and North Africa have such birds and there are American vultures. (*p.h.*)
Picture: **1**, 178

Vyrnwy is the name of a river of North Wales. By means of a dam, Lake Vyrnwy has been created as a source of water for Liverpool, **3**, 102; **6**, 249
Pictures: From Lake Vyrnwy to Liverpool, **6**, 243



W is the twenty-third letter of our alphabet. It does not appear in the Italian, French, Spanish and Portuguese alphabets, and is little used in some other European languages. The German W is sounded like our V. The written capital is two V's joined together : but, as the name of the letter implies, the V's are really the old-fashioned U's. In many ornamental W's the two V's cross each other near the top.

W is used as a vowel in "hew," "how," "pawl," where it forms a diphthong with a vowel, and even as a consonant — in "when" and "whip," for example — it is much like a vowel in sound. Before R it is silent ; and we do not sound it in "sword," "answer," and some other words.

W as an abbreviation stands for West, and for the element tungsten, originally called wolfram.

W.A.A.F. stands for Women's Auxiliary Air Force, now known as W.R.A.F. (*q.v.*).

Waal is the Dutch name for one of the arms of the River Rhine as it nears the North Sea, **4**, 69

Waco is a town of Texas, U.S.A. It is interested in cotton.

Wade, George (1673–1748). A British soldier. He commanded forces in the Highlands of Scotland and is famous as a maker of roads for military purposes.
Picture: **3**, 127

Wadebridge. A seaport and holiday centre of Cornwall, on the River Camel. A stone bridge which crosses the river here dates from about 1485.

Wadhurst is a village of Sussex.

Wadi-al-Lajaon. A district in the desert of Sinai.
Picture **1**, 314

Wadi Halfa is a town in the Anglo-Egyptian Sudan. It stands on the River Nile, and is a terminus of the Sudan railway.

Wadi Tharthar is between Baghdad and Mosul in Iraq and between the Rivers Tigris and Euphrates. A dam is to be built here as part of a great irrigation scheme. It will create a large artificial lake, **4**, 202

W.A.F.S. stands for Women's Auxiliary Fire Service, **2**, 394

Wagga-wagga is a town of New South Wales, Australia. It stands on the River Murrumbidgee.

Waghorn, Flying Officer. An airman who won the Schneider Trophy race in 1929 at more than 328 miles an hour, **5**, 206

Wagner, Wilhelm Richard (1818–83). One of the greatest of German composers, he wrote *Tannhauser* and *Lohengrin*. His last work was *Parsifal*, **7**, 183
—Rhine legends figure in his operas, **4**, 71
—Ludwig II of Bavaria was his friend, **4**, 84
Pictures: The Twilight of the Gods, **7**, 178
'Midst the Murmurs of the Forest, **7**, 179
The Mastersingers of Nuremberg, **7**, 181

Wagtail. Family of birds related to the pipits, but having longer footbones, wings and tails. Three species breed in Britain: the pied, the grey, and the blue-headed. The yellow wagtail is found in some localities and the white wagtail is a summer visitor. (*p.h.*)
Picture Nest, **1**, 175
Special Colour Supplement British Wild Birds, **1**, *between* 160 and 161 (Plates 3 and 4)

Wahibi is the name given to tribesmen of the Central Arabian Desert.
Picture **2**, 385

Waikato is the name of a river of New Zealand about 175 miles in length. It is in the North Island, **3**, 258
—coal is mined in the district to which the river gives its name, **3**, 264
Picture: Harnessing the Waikato, **3**, 266

Wailing Wall. See *Wall of Prayer.*

Waimangu is the largest geyser or natural hot spring in the world. It is in New Zealand, **3**, 260

Wainfleet is a small town of Lincolnshire. A grammar school was established here in 1484.

Wainfleet Scheme is a project by which land is being reclaimed from the sea in the Wash, **3**, 68

Wainwright is a town of Alberta, Canada, and a centre for oil production, **3**, 180

Wainwright Park is one of the great National Parks of Canada and is in the province of Alberta, **3**, 177

Waiotapu is a place in the Rotorua district of North Island, New Zealand, where steaming mud flats can be seen
Picture **3**, 254

Wairakei Valley is in the Rotorua district of the North Island of New Zealand. It contains samples of every kind of geyser and boiling spring to be found in the Dominion, **3**, 260
Picture **3**, 256

Wait-a-bit Thorn. Native to South Africa and one of the most terrible of the world's thorny plants, **1**, 351

Waitangi, Treaty of (1840). Concluded by Captain Hobson, on behalf of the British government, with the Maori chiefs of New Zealand. The Maoris acknowledged British rule and received guarantees of their rights and lands, **3**, 252

Waitemata Harbour, in the North Island, is the setting for Auckland, the largest city in New Zealand, **3**, 266

Waitomo is a district between Rotorua and the western coast of North Island, New Zealand. It is famous for its caves, **3**, 261
Picture **3**, 257

Wakefield. An important town of the West Riding of Yorkshire on the River Calder. It has great commercial interests and coal mines. The battle of Wakefield between Yorkists and Lancastrians was fought near the town on December 30, 1460

Wakefield, Dr. He was one of the climbers in a Mount Everest Expedition, **2**, 389

Wakefield, Edward Gibbon (1796–1862). An Englishman who was a pioneer in British colonizing during the nineteenth century. He formed the New Zealand Company, whose first settlers arrived in New Zealand in 1840, **3**, 252

Wake-Robin is a name given to the *Cuckoo-Pint* and to *Trillium* (*q.v.*).

Wakes, The. Name of the house at Selborne in which the naturalist Gilbert White was born.
Picture: **7**, 230

Wales is a peninsula on the west of England. It has an extensive coastline and includes the Island of Anglesey. It contains the upper reaches of the Severn and Dee as well as the Wye, Conway, Usk, Towy, Teifi, Clwyd and other rivers. The heights of Snowdonia come to the north but the centre of the country is also mountainous. The Welsh language, in use for over 2,000 years, is still spoken by over a million Welsh people.
The main industries of Wales are centred in the south, where is the great coalfield. Cardiff and Swansea are among the largest Welsh cities and the country comprises twelve counties, **3**, 93 *et seq.*
Wales, Prince of. See *Prince of Wales.*
Walfish Bay is a port on the coast of south-west Africa. It was discovered by Diego Cam in 1485 Now spelt Walvis Bay, **2**, 286
Waling is a term used in basket-making It applies to the use of three weaving rods, **8**, 392
Walker Art Gallery. A gift to the City of Liverpool by the late Sir A. B. Walker The originals of some of the famous pictures reproduced in this work are in the Walker Gallery.
Walkerburn is a town of Peebles-shire associated with the woollen industry.
Walker, Dame Ethel, is one of our foremost British artists, noted for her portraits, decorations and pictures of flowers, **7**, 118
Walking Dragline. A huge motor-driven machine specially designed for excavating work The biggest yet built is one used in opencast iron-stone mining in Northants.
Picture: **5**, 179
Walking Fish. See *Jumping Fish*
Wallaby. Found in Australia A cousin of the Kangaroo, but smaller than this animal, **1**, 80
Picture. **1**, 80
Photo-tone Supplement. Wild Life in Australasia, **1**, *between* 336 and 337
Wallace, Alfred Russell (1823–1913). Born at Usk, he explored the Amazon in company with Bates. A great English naturalist, **2**, 339 *et seq.*
Wallace, Edgar (1875–1932) Began life as a seller of newspapers and became a writer of thrilling fiction, such as *The Four Just Men.* Was also a successful playwright.
Wallace, Sir William (1270–1305) Leader and national hero of the Scots, **2**, 113
Pictures The Trial of William Wallace, **2**, 114
A Scottish Hero, **3**, 124
Wallachia. This is the name given to the southern plain of Rumania where wheat and maize are cultivated and cattle raised, **4**, 102
Wallam is the name given to the boats in which natives bring rubber from the plantations.
Picture: **6**, 323
Wallasey is a town of Cheshire at the mouth of the Mersey, opposite Liverpool and adjoining Birkenhead.
Wall Cress. Name sometimes given to the familiar rock plant arabis, or snow-on-the-mountain.
Waller, Edmund (1606–87). An English poet, he wrote *Divine Love* and a large number of short poems.
Wallflower. A hardy biennial The blood red and yellow varieties are very popular, **8**, 278
—where it grows wild, **1**, 338
Wall, Great, of China. See *Great Wall of China.*
Wallingford is a small market town of Berkshire, on the River Thames, 55 miles west of London. The Treaty of Wallingford was made here in 1153.
Wallingford, Treaty of (1153) brought to an end the struggle between King Stephen and Queen Matilda. It provided that Stephen should reign and that on his death Matilda's son, Henry, should succeed to the throne, **2**, 100
Wall of Prayer, or Wailing Wall, is in Jerusalem. It is reputedly a part of the ancient Temple, the great place of worship for the Jews of old.
Photo-tone Supplement Scenes in the Holy Land, **4**, *between* 176 and 177
Walloon. A Walloon is an inhabitant of that part of Belgium where French is spoken, *i.e.* the south-west, **4**, 23
Wall Pennywort. A small wild plant that grows mostly on old walls. It has fleshy leaves and bears its greenish-yellow flowers on spikes
Wallsend-on-Tyne is a town of Northumberland interested in shipbuilding and the heavy industries. It was here that the historic Hadrian's Wall reached its eastern end, **3**, 83
Walmer is a seaside resort on the Kent coast It has an ancient castle and is the nominal residence of the Lord Warden of the Cinque Ports.
Walnut. A noble tree which came originally from the East. Much esteemed for the nuts it bears, but more so for the strong timber it yields, **1**, 412
Pictures Flower Buds, **1**, 287
Trunk of a Walnut Tree, **1**, 318
Walnut in Summer, **1**, 322
Walnut in Winter, **1**, 323
Tree and Leaves, **1**, 411
Walpole, Horace, 4th Earl of Orford (1717–97) Though he was a Member of Parliament, his fame rests chiefly on his talent as a writer His *Memoirs* give an interesting account of life in his times.
Walpole, Robert, Earl of Orford (1676–1745) English statesman who was Prime Minister from 1721 until 1742 During this time, he was able to keep England out of wars without impairing her prestige There was great commercial progress, but also parliamentary corruption, **2**, 180
Walpole, Sir Hugh Seymour (1884–1941). Modern novelist. His works include *Rogue Herries* and *Judith Paris*, **7**, 251
Walpurgis Night is April 30th and is the occasion, according to old legends, when witches and wizards meet on the top of Mount Brocken in the Harz Mountains of Germany, **4**, 84
Walrus, a large, fin-footed sea mammal, 10 to 12 ft. in length, with big tusks, **1**, 108 (*p.h.*)
Walsall is one of the Black Country towns, in Staffordshire. It has collieries and heavy industries, **3**, 74
Walter, John (1739–1812) was the founder of *The Times* newspaper. He started his business life as a coal merchant in London and played a leading part in establishing a Coal Exchange. Later he turned to printing and publishing books, and in 1785 founded *The Daily Universal Register*, which was renamed *The Times* three years later, **9**, 209
Walter, Richard. Chaplain to Anson during his famous voyage round the world, he wrote a full account of the journey, **2**, 317
Waltham Abbey, Essex, is a town on the fringe of Greater London, a centre for market gardening. It stands on the River Lea. King Harold is believed to have been buried here after his death in the Battle of Hastings, 1066.
Walton, E. A. A Royal Scottish Academician, he was a notable painter of landscapes, **7**, 105, 108
Walton, Izaak (1593–1683). Author of *The Compleat Angler*, he is generally regarded as the patron saint of English anglers, **7**, 229; **8**, 245
Picture **7**, 229
Walton-on-Thames is a town and residential centre of Surrey noted as a river resort.
Walton-on-the-Naze. Popular holiday and residential resort on the Essex coast, **3**, 60
Walton, William (born 1902) is a contemporary British musical composer of the first rank His work includes overtures such as "Scapino" and "Portsmouth Point," a viola concerto, ballet music ("Façade"), and a brilliant choral work called "Belshazzar's Feast," **7**, 193
Waltz King was the name given to Johann Strauss who composed some 400 of such pieces of music, **7**, 189
Walvis Bay is the modern spelling of Walfish Bay, on the coast of South-west Africa. Although it is administered by South-west Africa, Walvis Bay is an integral part of the Cape Province of the Union of South Africa, **2**, 286
Walworth, Sir William The Lord Mayor of London who slew Wat Tyler (1381).
Picture **2**, 127
Walzin. The name of a castle in the Belgian Ardennes, in the valley of the River Lesse It dates, in its present form, from 1581.
Picture **4**, 26
Wanganui. This is the name of a river of the North Island of the Dominion of New Zealand
Photo-tone Supplement Capital of a Dominion, **3**, *between* 256 and 257
Wankie. A coal-mining town of Southern Rhodesia, **3**, 296
Wanlockhead, Dumfriesshire, is said to be one of the highest villages in Scotland It has lead mines close at hand, **3**, 112
Wantage, the hub of a large agricultural district, is in Berkshire. It was the birthplace of Alfred the Great
War. The term used of armed struggles between nations, or between parties within a nation. In the latter case it is known as a civil war.
—Seven Weeks' War, Seven Years' War, Thirty Years' War, Hundred Years' War, **9**, 325

—Great Wars of the last Hundred Years, 9, 325
—First World War (1914–18), 2, 234 *et seq.*
—Second World War (1939–45), 2, 247 *et seq.*
Waratah. British liner belonging to the Blue Anchor line which left Durban for Capetown on July 26th, 1909, and was never heard of again. There is little doubt that she capsized in the tremendous gale of July 28th, 1909, 8, 51
Picture: 8, 50
Waratah. Waratahs grow in the Australian bush. Their flowers are crimson and their leaves are vivid green. It is the emblem of New South Wales, 3, 248
Photo-tone Supplement: 1, *between* 336 and 337
Warbeck, Perkin (*c.* 1474–99). He laid claim to the English throne, and in 1495 appeared off the Kent coast with a few ships and men. In 1497, he landed in the West Country, but surrendered and in 1499 was hanged, 2, 137
Warbler. A family of small song birds which includes the Garden Warblers, the Sedge Warbler, Wood Wrens, Reed Wrens or Warblers, and Goldcrests, 1, 174
Ward, Artemus. See *Brown, Charles Farrar.*
Ward, Edward Matthew (1816–79). Well-known British artist.
Picture: 7, 139
Ward, Frederick, was an Australian bushranger. He called himself "Captain Thunderbolt" and bailed up (held up) the mails on at least four occasions. He died in 1870, 3, 205
Ward, Mary Augusta (Mrs. Humphry Ward) (1851–1920) A British novelist, born in Hobart, Tasmania, a grand-daughter of Thomas Arnold of Rugby, she attained considerable popularity by her books, the best-known of which was *Robert Elsmere*, first published in 1888.
Wardian Cases are like small portable greenhouses They are sometimes seen in large windows and are used on shipboard for plants, 6, 324
Ware. A small town of Hertfordshire on the River Lea, 20 miles north of London. The Great Bed of Ware, mentioned by Shakespeare, is still preserved.
Wareham. A small market town of Dorset. It stands on the Rivers Frome and Piddle, about 2 miles from Poole Harbour.
War Horses were massive animals used in the Middle Ages for carrying knights in armour. Our shire horses today are descended from them, 1, 97
War Memorial, Scottish National. See *Scottish National War Memorial.*
Warminster is a town of South Wiltshire, 15 miles south-east of Bath. It is the centre of an agricultural district.
Warnemunde. A Baltic seaport of Germany which is linked in normal times by a ferry steamer service to the Danish port of Gjedser.
Picture: 4, 45
War Office is the name of one of our state departments. At its head is the Secretary of State for War.
Warp is the name given to the lengthways threads in weaving, 8, 383
Warrior, Unknown. See *Unknown Warrior.*
Warrington. Large town in Lancashire. Noted for cotton, chemicals, soap and glass.
—where John Garton experimented with grain plants, 1, 380
Warsaw, standing on the River Vistula, is the capital of Poland and has a population of more than 600,000. It suffered heavily during the last war but rebuilding began soon after peace came, 4, 126
Pictures: A School in Warsaw, 4, 125
Prefabricated House, 4, 127
Wartburg. This is the name of the old castle at Eisenach in Germany. Here Luther lived and worked on his translation of the Bible.
Pictures: 4, 75 and 76
Wart Hog. Name of an animal with a large head and four tusks which has curious growths on its face and forelegs. It is found only in Africa and belongs to the pig family.
Wartwort. An old-fashioned name for the wild plant celandine, 1, 306
Warwick is the county town of Warwickshire and the centre of an important agricultural district. In Mill Street are well-preserved Tudor houses, 3, 70
Warwick Castle, built in the fourteenth century, stands on a bank of the River Avon at Warwick. Cæsar's Tower is an interesting feature, 3, 70
Warwickshire is one of the midland counties and contains the busy manufacturing towns of Birmingham and Coventry. Stratford-upon-Avon is one of the most interesting places in the county. The chief town is Warwick, 3, 70 *et seq*
Pictures: An English Village, 3, 1
Anne Hathaway's Cottage, 3, 70
The Memorial Theatre, Stratford-upon-Avon, 3, 71
The Ruins of Coventry Cathedral, 3, 75
Charlecote Park, 3, 408
Photo-tone Supplement: Kenilworth Castle, 2, *between* 128 and 129
Was. A fierce and primitive people living along the north-eastern frontier region of Burma, 4, 219
Wash, The. A part of the North Sea between the coasts of Lincolnshire and Norfolk. It is about 15 miles across but parts of it are now being reclaimed from the sea, 3, 66 and 68
—King John's baggage and treasures were lost in the Wash, 2, 107
Washington, George (1732–99). The great American statesman and soldier, 2, 194, 409, 410; 4, 261
—Father of the American People, The, 2, 190
—First President of the U.S.A., 2, 195
Pictures: Surrender of Cornwallis to Washington, 2, 194
Washington's Farewell to his Generals, 2, 195
The Most Valuable Statue in America, 4, 262
Independence Hall, Philadelphia, 4, 263
The Washington Memorial, 4, 264
Carved in the Rock, 4, 282
Washington, in the District of Columbia, is the capital of the United States. It was founded and planned by George Washington, 2, 195, 245; 4, 268
Pictures: The Washington Memorial, 4, 264
The Jefferson Memorial, 4, 266
Washington Greets a New American President, 4, 267
The White House, 4, 268
The Lincoln Memorial, 4, 269
Pictorial Map. 4, 291
Photo-tone Supplement: United States of America, 4, *between* 272 and 273
Washington. One of the Pacific States of the U.S.A. reaching in the north to the boundary of Canada. It has agricultural, lumber, fishery and industrial interests and mineral wealth. Olympia is the capital.
Pictorial Map: 4, 290
Wasp. Insect belonging to the same family as bees All wasps die at summer's end except the queen, which founds a new colony in the spring, 1, 264. (*p.h.*)
Pictures Comb of a Wasps' Nest, 1, 267
Head of a Wasp, 1, 268
Queen Wasp, 1, 266
Wasps' Nest, 1, 266, 269
Wasp Stings. As a first aid remedy, rub the part with a piece of wet washing soda or the surface of a cut onion, or apply weak ammonia, 8, 244
Waste Paper Baskets may be made in cane basket weaving. How it is done, 8, 392
Picture: 8, 393
Wastwater is the name of one of the lakes in the English Lake District
Wat is the name given in Siam to pagodas or Temples, 4, 207
Wat Arun Rajavararam, or Temple of the Dawn, is one of the great landmarks of Bangkok, the capital of Siam, 4, 207
Pictures A Temple Guardian, 4, 210
The Temple of the Dawn, 4, 211
Water is a chemical compound (H_2O) of hydrogen and oxygen, approximately one part oxygen to two parts hydrogen by volume and eight parts of oxygen to one of hydrogen by weight. Water, or its frozen form as ice, covers about 72 per cent. of the surface of the earth, constitutes some seven-eighths of animal life, and as much as 90 per cent of many plants, while it also occurs in a large number of minerals.
All natural water contains many impurities, but these in some cases may make the water valuable, as for instance in the case of mineral waters possessing medicinal properties. Water freezes at 32° Fahrenheit and boils at 212° Fahrenheit under normal pressure.
See also *Water Supplies*; *Electric Power from Water.*
Water Buck. Name of an antelope found in Africa that is very fond of water. It has large horns and stands about 4 ft. high.
Water Buffaloes are animals having large horns. The creatures are used for preparing land for crops and as beasts of burden, 3, 364

Water Bug. Name given to several kinds of water insects found on our ponds. Among them are the pond-skater (*Hydrometridae*) and water-boatman (*Notoneeta*) which rows its boat-shaped body under water.
Waterbury is a town of Connecticut, U.S.A., famous for its watches.
Water-bus. Name given to the passenger steamboats which have come into service on the Thames to serve London and riverside suburbs, **5**, 267
Pictures: **5**, 269
Watercress. A fresh-water plant much used as a salading.
—how it spread in New Zealand and Tasmania, **1**, 336
Water Dropwort. A variety of hemlock which grows in ditches and has a celery-like leaf. It is a very poisonous plant, **1**, 350
Waterfall is the term used to describe the perpendicular descent of the water of a river or stream, usually found at any point where the river flows from hard to soft layers of rock. The Niagara Falls of America are typical of the formation of many waterfalls.
In many parts of the world the tremendous force of the falling water is harnessed to produce electricity. See *Electric Power from Water*, **5**, 63 *et seq.* **5**, 94
—the world's greatest waterfalls, **9**, 316
See also *Atlas Supplement*, end of this Volume.
Water Figwort. A wild plant about 5 ft. in height growing in ditches and at streamsides. It bears small flowers in clusters, brown at first and then reddish.
Waterford is one of the southern counties of Eire, in the province of Munster. Its interests are mostly those of agriculture, though it has fishing ports, being a centre for the export of farm produce.
Waterford is the name of the county town which is also an extensive port on the River Suir, **3**, 149, 152
—James II sailed from Waterford after the Battle of the Boyne (1690).
Picture: **2**, 175
Water-Gas is manufactured at the gas works by blowing steam, mixed with air, through glowing coke, **6**, 269
Picture: A Carburetted Water-Gas Plant, **6**, 273
Watergate Bay, on the north coast of Cornwall, is famous for its caves and sands, **3**, 49
Water Hemlock. A plant which grows in moist places. A yellow juice in the roots will blister the skin. Sometimes called Cowbane because it is fatal to cows, **1**, 350
Water Hen. Name sometimes given to the *Moorhen* (*q.v.*).
Water Hog. A creature of South America, believed to be the largest gnawing animal in the world, **2**, 344
Waterhouse, John William (1849–1917). Well-known British artist.
Picture: **7**, 147
Water Hyacinth. A South American plant which floats on the water and sends up exquisite blue flowers, **1**, 337
Water Jewels. A Poem by Mrs. M. I. Butts, **9**, 110
Water Lily. Aquatic plant belonging to the *Nymphaeaceae* family. The roots are in the mud and the large round leaves float on the water. The flowers may be white, pink, yellow or blue. The largest type is Victoria regia, which has leaves about 6 ft. across, and grows in South America.
Waterloo, Battle of. June 18th, 1815. Here the Duke of Wellington, with a much smaller army, defeated the French under Napoleon, **2**, 207, 410
Pictures: From Quatre Bras to Waterloo, **2**, 201
Napoleon on the Road to Defeat, **2**, 205
Held against Napoleon, **4**, 22
The Lion of Waterloo, **4**, 23
Colour Plate: The Meeting of Wellington and Blücher, **2**, *facing* 208
Waterloo Bridge. A bridge across the Thames in London. The one built by Sir John Rennie in 1811–17 was demolished in 1937 and work on the new bridge was begun, but, owing to the war, the work was delayed. The bridge began to be used in November 1944 and was formally opened in December 1945.
The bridge has five spans each about 250 ft. clear. A memorial to Rennie, builder of the original bridge, consisting of columns and balustrading from the old bridge, is preserved in the new one.
Picture: **3**, 8
Photo-tone Supplement. Bridges Big and Little, **5**, *between* 64 and 65
Water-lovers, Some. The story of seals, sea-lions, walruses, porpoises, etc., **1**, 107 *et seq.*
Waterlow, Sir Ernest (1850–1919). An artist whose pictures of English scenery brought him fame. Became an R.A. in 1903 and was knighted in 1902.
Watermark Detector is used to ascertain whether a stamp has a watermark.
Picture: **4**, 397
Water Nymphs. The young of dragon flies. At this stage they cast their coats several times.
Pictures. **1**, 256, 257
Water Ouzel. See *Dipper.*
Water Rail. As the name suggests, a water-loving bird found in rushes and reeds beside rivers and ponds. It has a bright-red beak. Owing to its secretive habits it is rarely seen except by the most patient watchers.
Water Rat. Name sometimes given to the water vole (*q.v.*).
Water Serpent is a term applied to the *Anaconda* (*q.v.*).
Watersmeet. A Devon beauty spot near Lynmouth which has been acquired by the National Trust, **3**, 415
Water, "Soft" and "Hard." How and why it differs, **9**, 303
Water Solutions. Methods of growing plants in water solutions are now being carefully studied.
Picture: **1**, 391
Water Spider. This insect is a native of the British Isles and lives almost entirely in fresh-water streams. It constructs a dome-shaped cocoon and spends the winter below water in the nest so constructed, **9**, 368
Waterspout. A phenomenon sometimes observed at sea. It is the fine mist of a cloud brought to earth with a twirling motion, **5**, 24; **8**, 353
Picture: **5**, 20
Water Supplies. From the earliest days the problem of supplying adequate water to the population of cities and towns has brought various methods into operation. In recent times the city corporations or specially elected boards have become responsible for the duty. In London the Metropolitan Water Board supplies a wide area, drawing water from the Thames, the Lea, and chalk wells. Among the largest reservoirs in the country are the Elan Valley, Lakes Thirlmere and Haweswater, Lake Vrynwy, the Derwent Valley, and Loch Katrine. See *The Water We Drink*, **6**, 236 *et seq.*
Water Thyme. A Canadian water weed, **1**, 337
Water Vole. Small rodent about 8 in. in length with yellowish-brown fur. Sometimes called erroneously the water rat, **1**, 138
—spoor of the water vole, **1**, 124
Pictures: Water Vole at Home, **1**, 135
Water Vole, **1**, 137
Watford, standing on the River Colne, is an industrial town and residential centre of Hertfordshire. Printing, corn-milling and iron-founding are among its industries.
Watkins, H. G. An intrepid British Arctic explorer who lost his life in Greenland, **2**, 364
Watling Island, in the Bahamas, is believed to have been the landing place of Columbus in the West Indies, **2**, 278; **3**, 395
Picture: **2**, 277
Watling Street. Originally a British trackway, it became a great Roman highway running through Canterbury, London, St. Albans and Dunstable. Much of it is used today as a trunk road, **2**, 81; **3**, 7
Wat Phra Heo is the Siamese name for the Temple of the Emerald Buddha. See *Emerald Buddha.*
Watson, John (1850–1907). A novelist who wrote under the pen-name Ian Maclaren and is best known for his *Beside the Bonnie Briar Bush.*
Watson Lake is in the south of the Yukon Territory of Canada, almost on the border of British Columbia and on the course of the Liard River. It is also on the Alcan Highway, **3**, 197
Watson-Watt, Sir Robert Alexander (born 1892). He was primarily concerned in the invention of radio-location, **5**, 208; **7**, 390
Watt, James (1736–1819). A Scotsman, he made a valuable contribution to the perfection of the steam locomotive. He also invented a change-speed gear and a screw propeller, **2**, 409; **4**, 345; **5**, 117. (*p.h.*)
Picture: Learned from a Kettle Lid, **5**, 118
Watteau, Antoine (1684–1721). A French artist, he painted with great delicacy, **4**, 16; **7**, 63
Pictures: The Music Party and a Pastoral Picture, **7**, 64
Giles and His Family, **7**, 65
Wattle. This is the name of the national flower of Australia which is known to the botanist as the Acacia and is akin

to the mimosas of Europe and America. There are nearly 800 species in the world, and of these 500 are purely Australian, **3**, 248
Pictures: "Come Back in Wattle Time!", **3**, 203
Photo-tone Supplement: Wild Life in Australasia, **1**, *between* 336 and 337

Watts, Benjamin. A Yorkshire philanthropist, he founded the Society for the Prevention of Cruelty to Children in 1804

Watts, George Frederick (1817 1904). A great British painter, his earliest success was the design for a fresco for the House of Lords, **7**, 98
Pictures: "Hope," **7**, 99
Sir Galahad, **7**, 100
The Poet Peer, **7**, 149

Watts, Isaac (1674–1748). English writer and poet. He is best remembered for some of the 500 hymns he wrote, which included *O God, our Help in Ages Past* and *There is a Land of Pure Delight.*

Watzmann. A peak of the Bavarian Alps near the small town of Berchtesgaden. It is nearly 9,000 ft. high.
Picture: **4**, 81

Wauchope Forest is on the north coast of New South Wales, Australia
Picture. **4**, 393

Wavell, Field-Marshal Earl (1883 1950). A distinguished British soldier who joined the Black Watch in 1901, served in the South African War, the First World War and became G.O.C. Middle East in the Second World War. Appointed Viceroy of India in 1943, he was succeeded by Lord Mountbatten in 1947.

Waverley Novels, a series of romantic historical novels by the great writer, Sir Walter Scott. He is often called "the founder of the historical novel," **2**, 411; **7**, 204

Waverley Route is the name given to the main line of railway from Carlisle up Liddesdale, down the Valley of the Tweed and so to Edinburgh, **3**, 112

Waxwing. A crested bird which only occasionally visits Britain but sometimes comes in large numbers, generally between October and April. On the forehead the long crest is of chestnut colour; a white bar crosses the blackish wings while the underparts are dove grey. The tips of the secondary tail feathers are red and wax-like. It is about 7 to 8 in. in length.

Wayfaring Tree. A species of Viburnum which flourishes on chalky ground. It bears bold heads of whitish flowers which are followed by glowing crimson berries, **1**, 306
—The berries are poisonous, **1**, 344
Picture: **1**, 346

Wazirabad is a manufacturing town of the Punjab, India. It stands on the River Chenab.

Waziristan is a large district in the N.W. Frontier Provinces of the Dominion of Pakistan. It is close to the frontier of Afghanistan and very mountainous.

W.D. means War Department.

Weald. Name given to the districts of Kent, Surrey and Sussex lying between the North and South Downs. They were once forests, **3**, 34
—from the fourteenth to the seventeenth century the Weald of Sussex was the great iron-smelting district of England, **6**, 48

Weald Formation. Deposit of sludge brought down by a mighty river in prehistoric times, **1**, 6

Wear. A river of the county of Durham with Sunderland at its seaward end, **3**, 80

Weasel. An animal common in England, Scotland and Wales. Smaller than the stoat, but of the same tribe, **1**, 127; **9**, 364
Picture: **1**, 127

Weather and Its Ways. The problems relating to the processes which manifest themselves as weather are the subject of investigations made by students of the science of Meteorology (*q.v.*), **5**, 1 *et seq.*
—forecasts given by the B.B.C., **5**, 3
—forecasting from "space-stations," **5**, 246

Weather Depressions are caused by a system of low pressure in the atmosphere. Secondary depressions are the outcome of such a system, **5**, 19 *et seq.*
Picture When the Warm Front Meets the Cold, **5**, 10

Weather Ships. A fleet of ships maintained by eight nations and stationed in various parts of the oceans in order to assist in obtaining accurate weather forecasts, **5**, 23
Pictures. Ready for Duty in the Atlantic, **5**, 21
Fixing the Radio Transmitter, **5**, 22
Checking the Radar Aerial, **5**, 23
Bound for the Stratosphere, **5**, 24
Ready to go Aloft, **5**, 25

Weathervane and Weathercock. How they tell which way the wind is blowing, **9**, 170

Weaver is the name of a Cheshire river, flowing past Northwich and Nantwich, **3**, 76

Weaver is a term used in basket-making A cane is so called because it is woven under and over other stakes, **8**, 391
Picture: **8**, 394

Weaver Bird. Popular name given to several kinds of small birds which cover their nests with woven grass bags. They are found in various parts of the world, including India, Ceylon and South Africa.
Picture: (Nest), **1**, 167

Weaver Fish. A poisonous fish with spiny fins. A scratch from one of the spines is like a snake-bite, **1**, 219
Picture: **1**, 218

Weaving is the arranging of threads so as to form a material, the work being usually done on a loom. Lengthways threads in weaving are the warp; cross-threads the weft or woof; and the whole fabric the web, **8**, 383 *et seq.*
See also *Cotton Growing and Spinning*, **6**, 335; and *The Romance of Wool*, **6**, 357
Photo-tone Supplement: An Apprentice Works at the Loom, **8**, *between* 368 and 369

Weaving on a Frame is a simple handcraft by which many useful things may be made, **8**, 383
Picture: **8**, 385

Weaving Stitch, as used in embroidery, is useful for working borders with drawn threads as a foundation, **8**, 416
Pictures: How the Laid Threads Appear, Weaving the Threads, **8**, 415

Web is the name given to the finished fabric when weaving, **8**, 385

Webb, Captain Matthew (1848-83). The first man to swim the English Channel. He accomplished the feat in 21¾ hours in August 1875. He lost his life in attempting to swim the Niagara Rapids.

Webb, Marion St. John, was author of the "Papingay" books, *The Littlest One* and many other works and poems for children.
Poem Goblins' Lanterns, **9**, 413

Weber, Carl Maria von (1786-1826). A very famous German composer. *Oberon* was his last work, which he himself conducted at Covent Garden Theatre, London, **7**, 182
Pictures. Von Weber, **7**, 176
The First Conductor with a Baton, **7**, 177

Webster, Flight-Lieut S. N., won the Schneider Trophy race in 1927 at over 281 miles an hour, **5**, 206
Picture. **5**, 201

Webster, Noah (1758-1843) An American schoolmaster who devoted most of his life to the compilation of his famous Dictionary (1828) which standardised the American way of spelling certain English words

Weddell, James (1787 1834). A British Antarctic navigator and sealer. He gave his name to the Weddell Sea and the Weddell seal. Discovered the South Orkneys and surveyed the South Shetlands.

Wedging is the term used for the preparation of clay for pottery work, **8**, 404

Wedgwood, Josiah (1730 95). A world-famous English pottery manufacturer who employed the sculptor Flaxman to prepare his designs for the famous Wedgwood Ware, **2**, 183
Picture: Wedgwood Ware, **9**, 202

Wedgwood Ware, especially the jasper kind, is noted for its raised figure-work and decoration on a plain ground.
Picture. **9**, 202

Wedmore. A small town of Somerset. Here King Alfred the Great made a treaty with the Danes (A.D. 878).

Wednesbury is a busy industrial town of Staffordshire and the Black Country, **3**, 74

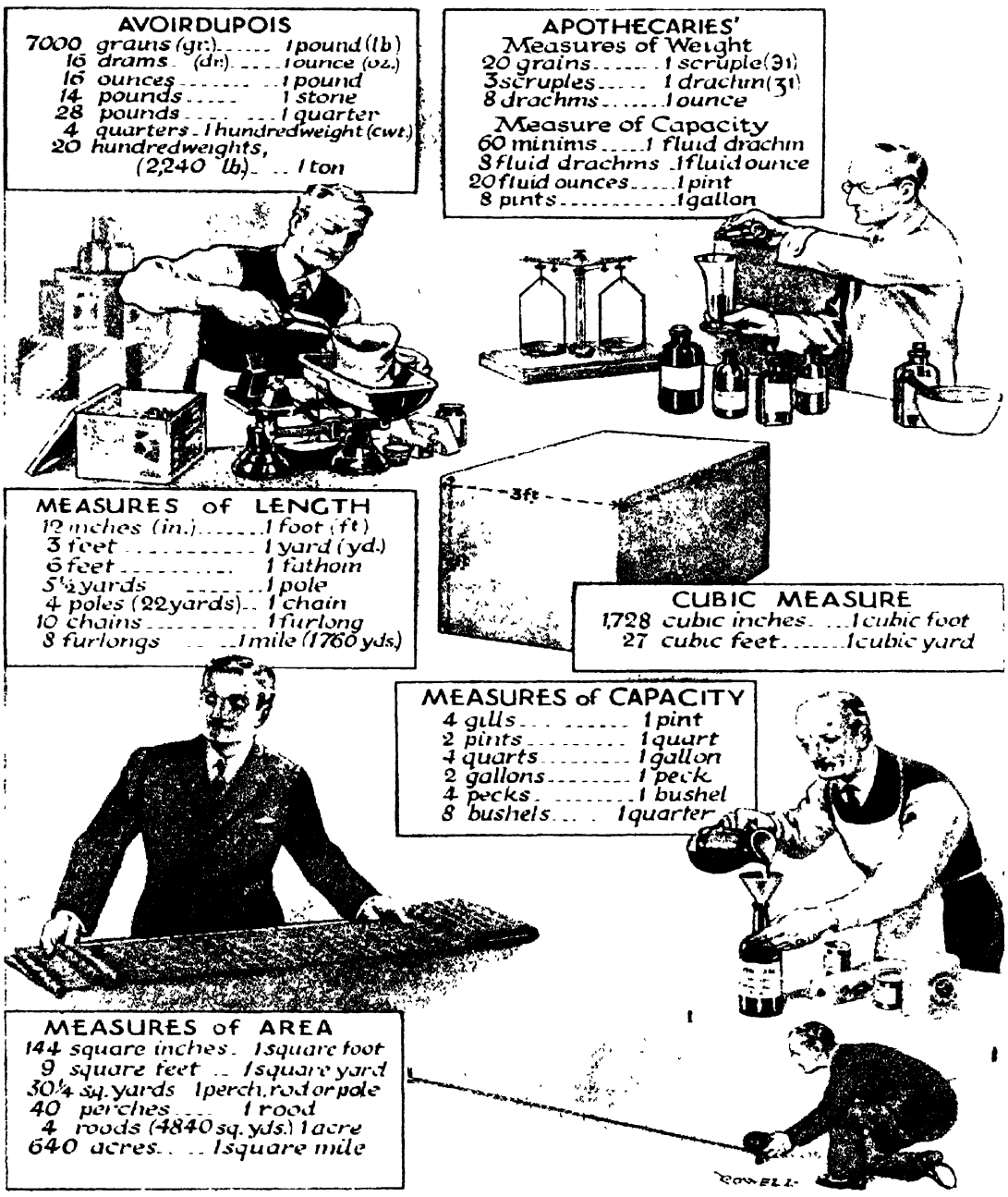
Weekly News from Italy, Germany and Hungaria. The name of one of the earliest newspapers, probably the first real newspaper to be printed in England. It was issued by Nicholas Bourne and Thomas Archer in 1622, **9**, 206

Weeping Willow. A pretty, graceful tree often seen growing at the waterside. It is a distinct variety of willow brought from the East.

Weevils are very small insects and do much damage in granaries or wherever corn is stored. Their mouths come at the end of a long snout. The cotton-boll weevil does much damage to cotton crops.

Weft, or woof, is the name given to crossways threads in weaving, 8, 385

BRITISH WEIGHTS AND MEASURES



Specially drawn for this work.

Early *weights and measures* (see p. 400) were based on natural measures as, for example, the cubit, the length from the elbow to the tip of the longest finger. In the twelfth century a grain of wheat or barley was the standard of weight in England ; later, three barleycorns equalled an inch in length and 12 inches became 1 foot. To-day the legal unit is the yard (originally based on the length of the king's arm) , of weight, the pound ; of volume, the gallon, which is based on the pound (10 pounds water equal to 1 gallon).

Weight, Putting the. See *Putting the Weight.*

Weights and Measures were in early days based upon natural measures of length, *e.g.* the cubit which was the length from the elbow to the tip of the longest finger, a measurement which naturally might vary up to three inches. British weights and measures have become slowly standardised through centuries, but in Europe, except Russia, the metric system has been generally adopted. In Great Britain the legal unit of length is the yard; of weight, the pound; of volume, the gallon, **9**, 404
See also *Metric System.*
Picture: **10**, 399

Weimar is an ancient city of Germany. It is the capital of Thuringia and was the residence of Goethe and Schiller.

Weir. A low dam or barrier across a river or stream, to control its flow. A weir often contains gates, which can be opened or closed as may be necessary.
Picture: Two Australian Weirs, **6**, 247

Weld means to join (metal parts) together by using heat and pressure. Tram rails are welded end to end by means of a mixture of iron and aluminium, called thermit, which creates intense heat when ignited.
—Electric Arc Welding, **6**, 80
Picture: **6**, 84

Welford-on-Avon is a Warwickshire village containing some picturesque old thatched cottages.
Picture: **3**, 1

Welland Canal is a waterway, some twenty-five miles in length, in Canada. It links Lake Erie with Lake Ontario, **3**, 185
Picture: **3**, 190

Wellesley, Arthur. See *Wellington, Duke of.*

Wellesley Province is found on the coast of the Malay Peninsula. It is British and part of the Straits Settlements.

Wellingborough is a town of Northamptonshire and our second largest producer of iron, **3**, 69

Wellington, at the southern tip of North Island, is capital of New Zealand. It exports farm produce and is the chief distributing centre of the Dominion, **3**, 263, 266
Pictures: **3**, 265; **9**, 44
Photo-tone Supplement: Capital of a Dominion, **3**, *between* 256 and 257

Wellington. Name of a market town in Shropshire about ten miles from Shrewsbury.
—a meteor fell near Wellington in 1876.
Picture: **8**, 162

Wellington, Duke of (1769–1852). Born Arthur Wellesley, he became one of our greatest soldiers. In Spain he drove back the forces of Napoleon Bonaparte and in 1815 finally defeated him at Waterloo, **2**, 201 *et seq.*, 410
Pictures: From Quatre Bras to Waterloo, **2**, 201
At Quatre Bras, **2**, 203
The Meeting of Nelson and Wellington, **2**, 204
Held Against Napoleon, **4**, 22
The Lion of Waterloo, **4**, 23
Colour Plate: The Meeting of Wellington and Blücher, **2**, *facing* 208

Wellingtonia. A giant tree brought to this country from America. Known as the Californian Big Tree and the Sequoia.

Wells, Herbert George (1866–1946). One of the foremost British writers. Before taking to writing he had been a draper's assistant, chemist and schoolmaster. *Kipps* recalls his life in the drapery business whilst his *Tono-Bungay*, *Ann Veronica*, and *Love and Mr. Lewisham* are among his best-known ordinary life novels. In another phase he wrote stories of the future, *The First Men in the Moon*, *The Time Machine*, *The War in the Air*, then in 1920 *The Outline of History* brought him fame in a different sphere. Later he wrote on sociological problems in books such as *The Work, Wealth and Happiness of Mankind* and in his eightieth year was at work on the script for a new film *The Way the World is Going* when he died in August 1946, **7**, 256
Pictures: H. G. Wells, **7**, 256
An Incident from *Kipps*, **7**, 258

Wells is a city of Somerset famous for its cathedral, built in the twelfth and thirteenth centuries.
A feature of the cathedral is Jack Blandiver's clock, said to have been made in 1392. Knights revolve above the clock as each hour is struck to represent an old-time tournament.
Pictures. Unusual Arches in Wells Cathedral, **3**, 57
Jack Blandiver's Clock, **10**, 85
Photo-tone Supplement: Wells Cathedral, **2**, *between* 128 and 129

Welsbach, Auer von. He invented the incandescent gas mantle, **6**, 16

Welsh, the word the English use for the people of Wales. It means really foreigners, **2**, 111

Welshpool is a town of Montgomeryshire, in North Wales, a centre of the woollen industry, **3**, 102

Welsh Wool is a type of wool which is very useful for flannel manufacture because it is less liable to shrink than other types, **6**, 358

Welwyn Garden City, Hertfordshire, was begun in 1920. It forms an ideal of what a modern residential district should be and has houses with large gardens, tree-lined roads and many other amenities. It is 20 miles north of London.

Wembley, Middlesex, is a pleasant suburb of Greater London. Here the British Empire Exhibition was held in 1924–25, from which King George V gave his first wireless broadcast, **2**, 241
Picture: **2**, 238

Wemyss is a town of Fifeshire, standing on the Firth of Forth. It has collieries in the neighbourhood.

Wenceslas. A Bohemian ruler and saint who tried to spread Christianity among his people. He founded many churches in Prague and elsewhere. His goodness aroused discontent among the nobles and he was slain by his brother in 935. He is the "good King Wenceslas" of the carol.
Picture: **4**, 93

Wendover, in the shadow of the Chiltern Hills, is a small town of Buckinghamshire. Halton, a centre of training for the Royal Air Force, is nearby.

Wener. A great lake of southern Sweden that is crossed by the inland waterway to the great port of Gothenburg, **4**, 45

Wensum is the name of a river of Norfolk. It flows through Norwich and runs into the Yare, **3**, 62

Wentle-trap. One of the sea snails which has a pretty graceful shell. The name means "turning stair," **1**, 228
Colour Plate: British Shells, **6**, *facing* 397

Weser. An important river of Germany. It empties into the North Sea near the port of Bremen.

Wesley, Charles (1707–88) Brother of John Wesley, he wrote *Hark, the Herald Angels Sing*, *Jesu, Lover of My Soul* and many other famous hymns, **2**, 182

Wesley, John (1703–91) Outstanding English divine, preacher and revivalist. He was the originator of modern Methodism, **2**, 182; **3**, 48

Wessex was the kingdom of the West Saxons and Winchester was its chief town, **2**, 85

West Africa, British. See *British West Africa.*

West Africa, French. Consists of the following territories: (1) *Senegal.* The capital is St. Louis and on the coast is the important naval base and port of Dakar. Cattle and horses are raised and grain crops and groundnuts are cultivated (2) *Mauritania* (3) *French Guinea* which is on the coast between Sierra Leone and Portuguese Gambia. Conakry is the capital. (4) *French Sudan* Bamako is the capital. Products include maize and groundnuts, and the waters of the Niger River are used for irrigation purposes. (5) *Niger.* (6) *The Ivory Coast.* The capital is Abidjan. Groundnuts and cocoa are chief crops. Mahogany is obtained from the inland forests and gold is mined. (7) *Dahomey.* A coastal strip between Togoland and Nigeria. Porto Novo is the chief town. (8) *Upper Volta.* Bobo-Dioulasso is the chief town and Ouagadougou is the capital.

West Africa, Portuguese. See *Angola.*

West, Benjamin (1733–1820). An Anglo-American artist, he became painter to George III.
Pictures: Hannibal Swearing Enmity to the Romans, **2**, 63
The Death of Wolfe, **2**, 189

West Bromwich is a busy industrial town in the Staffordshire Black Country. In particular, it produces coil springs, **3**, 74

Westbury, Somerset. Not far from here is the famous Wookey Hole (*q.v.*), **3**, 58

West Country is a name given to the counties of Dorset and Somerset, but is often extended to embrace neighbouring counties, **3**, 56

"West Country" Class of modern railway engines are used for express services in the Southern Region of British Railways.
Colour Plate: **5**, *facing* 128 (Plate 2)

Western Australia is the largest state in the Australian Commonwealth, but her area is largely dry country and

her population is smaller than that of any other state, save Tasmania. Western Australia has a long coast line and is an important gold and iron ore producer. In addition, there is timber, fruit, grain, wool, and coal: also dairy produce and stock raising. The state capital is Perth which has a population of over 270,000, **3**, 219 *et seq.*
Pictures: On the Outskirts of Kalgoorlie, **3**, 205
Looking at Perth from King's Park, **3**, 219
Kalgoorlie Gold, **3**, 220
Mining in Western Australia, **3**, 239
Photo-tone Supplement. Two Australian State Capitals, **3**, *between* 240 and 241
Pictorial Map: **3**, 242

Western Ghats is the name given to the terraced hills along the western coast of Peninsular India which occur where the high plain of the Deccan falls away towards the Arabian Sea, **3**, 324

Western Trunk Highway is one of the chief roadway systems of the South American republics. It runs from Rumichaca, on the frontier of Ecuador, to Yarumal and Puerto Valdivia.
Picture. **4**, 334

Western Union. This is the name given to a proposal made by General Smuts in 1943 that the democratic countries of Western Europe should work together in association. Effect has been given to this proposal by such agreements as the Benelux Customs Union (between Belgium, Holland, and Luxembourg), the Brussels Treaty of 1948 (*q.v.*) and the Council of Europe, **2**, 258, 414

West Flanders is one of the provinces of Belgium. Bruges is its chief city.
Picture **4**, 20

West Highland White. Name of a popular breed of small terrier dogs, **8**, 315

West Indies. This is the name of the chain of islands lying off Central America between the Atlantic Ocean and the Caribbean Sea. They were so called because Columbus, when he discovered them, believed he had reached the Indies off south-eastern Asia, **3**, 395

West Indies, British. See *British West Indies.*

Westinghouse Brake is a type of air brake used on railway trains, **9**, 396

West Lothian is a county of south-east Scotland. It has the Firth of Forth to the north and contains the River Almond. Its interests are mainly agricultural
Linlithgow is the capital, the county having formerly been known as Linlithgowshire.

Westmeath, in the Province of Leinster, is a county of Eire. It contains Lough Ree and has the great River Shannon running through it. The county town is Mullingar.

Westmill is a village in Hertfordshire not far from the old Roman highway of Ermine Street.
Picture: **3**, 79

Westminster is one of London's great boroughs and a separate city. It is of great antiquity and there was a royal palace here in the time of King Canute.
It includes Hyde Park, St. James's Park, the Houses of Parliament, Westminster Abbey, Westminster Hall, Westminster Cathedral (Roman Catholic), Buckingham Palace and St. James's Palace as well as Victoria Railway Station and the Guildhall of the Middlesex County Council.

Westminster Abbey, where so many of our greatest men and women are buried, was built by Henry III in the main as a burial-place for the sovereigns of England and as a tribute to Edward the Confessor of whose earlier church it was a reconstruction. Through our history, the Abbey has been the scene of royal weddings, funerals, and coronations.
— Edward the Confessor's Abbey, **2**, 93
— Caxton's printing press at the Abbey, **2**, 137
— monument to General Wolfe, **2**, 189
— the Royal Wedding (1947), **2**, 263
— our national Valhalla, **3**, 7
— builders of the Abbey, **7**, 300
Pictures The Most Historic Church in England, **3**, 15
Where Kings and Queens are Crowned, **3**, 16
The Coronation Chair, **7**, 310
Henry VII's Chapel, **7**, 311
Photo-tone Supplement Our "Treasure House of Memories," **2**, *between* 128 and 129

Westminster Bridge. The original bridge here was opened in 1750 as the second bridge built across the Thames in London. The present Westminster Bridge, however, was built about the middle of the nineteenth century.
— a former Westminster Bridge was lighted by gas in 1813, **6**, 15
Colour Plate Westminster Bridge and Big Ben, **3**, *Frontispiece.*

Westminster Cathedral, London, is the largest Roman Catholic church in Britain. It was completed externally in 1903 and is the church of the Cardinal-Archbishop.
Picture **3**, 19

Westminster Hall. Part of the old Palace of Westminster, it was built originally for William Rufus. Scene of the trial of Charles I, **2**, 162
Picture **7**, 323
Colour Plates. The Challenge of the King's Champion, **2**, *facing* 108
Oliver Cromwell becomes Lord Protector, **2**, *facing* 157

Westminster, Statute of (1931) recognised the right of the Dominions to nationhood and bound them to Britain only through the Crown which was to be "a symbol of free association," **2**, 241

Westmorland is a county of Northern England. It includes in its mountainous surface both Helvellyn and Bow Fell and has the Rivers Eden, Leven and Kent. It shares some of the famous English lakes with Cumberland and Lancashire and has others, such as Grasmere, within its own borders.
Sheep are run on many of the hillsides and there are small farms in the deep valleys.
The county town is Appleby.

Weston, Dame Agnes (1840-1918). Known as the "Sailors' Friend," she organised rests and institutes for men of the Royal Navy and was for many years the active superintendent of the Royal Naval Temperance Society. Created G.B.E. in 1918.

Weston, Sir Richard (1591-1652). Son of a Surrey knight and educated in Flanders he succeeded to his father's estates at Sutton near Guildford in 1613. He introduced some of the best Flemish agricultural methods and was also responsible for the system of canal and river locks which helped transport by inland waterways, **1**, 386

Weston-super-Mare is a popular watering place and holiday resort of Somerset, situated on the Bristol Channel. It stands on two bays.
Two lonely islands, the Flat Holme and the Steep Holme, are seen in the Channel from Weston, **3**, 56

Westphalia is a large district of Prussia, Germany, now in the British Zone of occupation. It is an important centre in iron, steel and other of the heavy industries.
The capital was formerly Munster and the largest town is Dortmund

Westport. (1) A town and harbour of County Mayo, Eire.
(2) A town and seaport on the west side of the South Island of New Zealand, **3**, 256, 264

West Riding of Yorkshire is very thickly populated and a great centre in the woollen industry, **3**, 82

West Virginia is one of the states of the U.S.A. It has wide agricultural interests, including tobacco plantations and has important mines and quarries and many industries. The state capital is Charleston.
Pictorial Map **4**, 291

Westward Ho! (1) Title of a famous book by Charles Kingsley which was written at Bideford, **3**, 51
Colour Plate An Incident from "Westward Ho!" **7**, *facing* 360
(2) A holiday resort on the coast of north Devon

Wetter is the name of a lake in Sweden. It is about 81 miles in length. On its shores is the town of Vadstena, with its old castle built by King Gustavus I, **4**, 45
Picture **4**, 38

Wetterhorn is a mountain of Switzerland more than 12,000 ft. high. Near its summit there are extremely steep precipices.
Picture. **4**, 62

Wexford is a county of Eire in the Province of Leinster. It is a great centre for farming and the export of farm produce.
Wexford is the name of the county town. It is interested in the fishing industry, shipbuilding and the export of dairy produce, **3**, 149, 152

Wey. A river of Hampshire and Surrey which flows into the Thames in the neighbourhood of Weybridge, **3**, 33

Weybridge. A favourite residential town of Surrey. It is situated where the River Wey unites with the Thames.

Weyman, Stanley John (1855-1928). An English barrister who turned novelist, writing chiefly historical romances, including *A Gentleman of France* and *Under the Red Robe*

Weymouth. Large health resort on the Dorset coast with a beautiful bay. Associated with Thomas Hardy's novel *The Trumpet Major*. Port for Channel Islands steamers, **3**, 38

Whakarewarewa is the name of an old Maori village near Rotorua, in New Zealand, **3**, 260
Pictures: Maori Games and Dances, **3**, 251

Whale. Group of large mammals, fish-like in form, and adapted for life in the sea. There is a thick layer of fat (blubber) under the skin. The fore-limbs are converted into paddles and the creature has also a tail fin. There are two types: the toothed whales and the whalebone whales. The toothed kind include the Sperm Whale, dolphin, porpoise and narwhal.
The largest and most valuable is the Sperm Whale (or Cachalot) which yields whale-oils, spermaceti and ambergris.
Of the Whalebone Whales the Greenland was most important but has now almost disappeared. So, too, has the Nordkaper, owing to over-hunting, **1**, 111; **9**, 364
Pictures: Out of its Element, **1**, 111
A Spouting Whale, **1**, 112
How Whales and Fish Breathe, **9**, 369

Whalebone. A curious horny substance that hangs down from the roof of the mouth in the species known as the toothless or whalebone whales, **1**, 112

Whale Horse. A name sometimes given to the walrus (*q.v.*)

Whale Island is on the east side of Portsmouth Harbour and is well known for its school of naval gunnery.

Whale Shark. The biggest of the sharks as well as the biggest of all fish. It may weigh four or five tons and measure up to 70 ft. or more in length, but it is comparatively harmless as its teeth are minute, **1**, 208
See also *Shark*

Wharfe. River of Yorkshire. Sixty miles long, it flows through Wharfedale, past Bolton Abbey, to Ilkley, and then to Cawood where it joins the River Ouse.

Whaup. Name given in Scotland to the bird *Curlew* (*q.v.*)

Wheat. A cereal plant which has been cultivated for food since earliest times and is now one of the principal food crops for mankind. It is grown in the temperate zones of the world, the warm, dry regions producing the best crops. Many different varieties are cultivated, **1**, 307
—the story of Canadian wheat, **3**, 175 *et seq.*
Pictures: Harvesting Canada's Crop, **1**, 307
Sussex Corn, **3**, 35
Harvesting in the Modern Style, **3**, 59
A Wheatfield of the Prairies, **3**, 175
No Room in the Elevator, **3**, 176
Threshing the Prairie Harvest, **3**, 177
Towering Grain Elevators, **3**, 178
Grain from the Golden Plains, **3**, 179
Grain Loading, **3**, 182
Product of Canadian Prairies, **4**, 384
Grasses Cultivated for Food, **10**, 71
See also *Science Comes to the Farm*, **1**, 385 *et seq.*; *The Farmer's Busy Year*, **6**, 379

Wheat Belt. The area of Canada in which it is possible profitably to grow wheat, **1**, 382

Wheaten Bread. Bread made from wheat. One hundred years ago such bread was available only to people who were well provided with money, **1**, 307

Wheatear. A small bird, it is one of our summer visitors. It lives largely on flies, many of which it catches on the wing.
Picture: **1**, 186
Special Colour Supplement British Wild Birds, **1**, *between* 160 and 161 (Plate 3)

Wheat Pools are formed by the collection and storage of the grain at a central point, **3**, 178

Wheatstone, Sir Charles (1802–75). A British inventor, he produced the first practical telegraph and among other inventions he brought out were the stereoscope, the rheostat and synchronised electric clocks
—his "Enchanted Lyre," **5**, 110

Whelk. A spiral-shaped, uni-valve mollusc akin to the snail family, **1**, 227
Picture. Eggs of the Whelk, **1**, 229
Colour Plate. British Shells, **6**, *facing* 397

Whenuapai is an airport near Auckland in the North Island of New Zealand, **3**, 272

Whetting is the term used for sharpening a scythe with a prepared stone, **6**, 386

Whig. Name given to the political party which opposed the Tory party. The name Liberal eventually took the place of "Whig" about 1832, **2**, 173

Whimbrel. A wading bird, often known as "Jack Curlew." It is smaller than the common curlew (or whaup) and is a summer visitor to North Scotland

Whinchat. A bird about 15 in. in length and one of our summer visitors. Varies little from its cousin the Stonechat.
Picture **1**, 177

Whipbird is a bird of Australia which makes a noise like a whip, **3**, 246

Whippet. A small dog that is a cross between a greyhound and an Italian terrier. Whippet-racing is a popular sport in the North of England.

Whipping is a stitch used in plain needlework to finish an edge where a hem is not desired, **8**, 410
Picture **8**, 408

Whipsnade, the country section of the London Zoological Gardens, is in Bedfordshire, about three miles from Dunstable, **9**, 408
Picture: **10**, 415

Whirlpool. A circular eddy in a river or sea produced by the meeting of opposing currents, or sometimes by winds, or by tidal currents sweeping through narrow channels.
Picture: The Whirlpool at Niagara, **10**, 409

Whirlwind. Name given to a tornado-like storm which shows as a funnel-shaped cloud and travels like a mad giant, **5**, 24

Whistler, James Abbot McNeill (1834–1903). A great painter, he was born in America but lived in Paris and in England. Specially known for his nocturnes and paintings of the River Thames, **2**, 221; **7**, 100
Pictures. "The Artist's Mother," **7**, 101
Old Battersea Bridge, **7**, 103

Whitaker, Joseph (1820–95). An English publisher whose name has become familiar through *Whitaker's Almanack*, an annual work of reference first issued in 1868.

Whitby. Fishing port and holiday resort at the mouth of the River Esk, Yorkshire. It has the ruins of an Abbey founded by St. Hilda in the seventh century, **3**, 84
– remains of the plesiosaur found here, **1**, 26
—Caedmon at Whitby, **2**, 84
– the birthplace of Captain James Cook, **2**, 309

White, Claude Grahame. See *Grahame White, Claude.*

White, Henry Kirke (1785–1806). An English poet, he is identified with the city of Nottingham. He wrote the well-known hymn *Oft in Danger, Oft in Woe*

Whitebait, popular as a fish dish, is the young or fry of both herrings and sprats

White Bryony, a wild plant with curious spiral tendrils, **1**, 305
– the leaves and berries are poisonous, **8**, 244

White Dwarf is the name given by astronomers to a star in the course of cooling

Whitefield, George (1714–70). A great religious reformer. He went, at Wesley's invitation, to Georgia to do missionary work, later returning and preaching in the British Isles. He had a remarkably clear and powerful voice and preached in the open to as many as 20,000 people at a time, **2**, 182

White Fox. Name given to the Arctic fox in winter when its coat is snowy white

Whitefriars Street. Famous London thoroughfare named after the White Friars who once lived here in their priory. It now contains newspaper and other offices
Picture Skull of a Woolly Rhinoceros found here, **1**, 32

White, Gilbert (1720–93). An English clergyman, he became famous as a field naturalist. His *Natural History of Selborne* is still widely read, **7**, 203
Pictures. "The Wakes" at Selborne, **7**, 230
Gilbert White at his Desk, **7**, 231
Paying Calls in the Parish, **7**, 232

Whitehall is the name given to a famous London thoroughfare after the palace of Whitehall which Henry VIII built hereabouts in 1532 and which was destroyed in 1698 by fire. In Whitehall are many government buildings and also the Admiralty, the War Office, and the Horse Guards.
Pictures **3**, 12, **7**, 335

Whitehall, Palace of. This London Palace was mostly destroyed by fire in 1698, but the Banqueting House remains and is given over to the museum of the Royal United Service Institution. See *Banqueting Chamber, Whitehall.*

Whitehaven is a town on the Cumberland coast interested in coal, iron and shipbuilding, **3**, 90

Whitehead, Robert (1823–1905). A

British engineering draughtsman and inventor, he perfected a torpedo based on crude models shown to him by an Austrian naval officer, **8**, 12

White Horse is a town of the Yukon territory on the Alcan Highway, **3**, 197

White Horses are sometimes found carved on English chalk hills, the most famous being that on the Berkshire Downs, near Uffington Castle, **9**, 323

White House is the name of the official residence of the President of the U.S.A. It has been used by American Presidents since 1800, **2**, 245
Picture **4**, 268

White Lead, used as the basis of many paints, is carbonate of lead.

White Lodge. A royal residence in Richmond Park, Surrey. Here H.R.H. the Duke of Windsor was born. The house formed the first home of King George VI and Queen Elizabeth on their marriage.

White Nile is the name given to the main course of the River Nile above Khartoum, **2**, 244; **4**, 197

White Paper. A report issued by the Government to give information to the public on such matters as Foreign Affairs, Government Expenditure on public works, Economic Conditions, etc. See also *Blue Book*.

White Pine Butterflies. Pests which from time to time have stripped pine trees in American forests, **1**, 317

White Rajah was the title given to James Brooke of Sarawak, **2**, 325 *et seq*
Pictures: The Palace of Rajah Brooke, **2**, 325
A Scene in Sarawak, **2**, 326
Going to Fetch Water, **2**, 327
Dyaks in their Homeland, **2**, 328
In Search of the Ipoh Tree, **2**, 329
The White Rajah, **2**, 330

White Russia. See *Byelorussia*.

White Russian is a Russian from Byelo, or White Russia, a republic of the Soviet Union which lies along the western Dvina and Dnieper Rivers. But the term is also used to describe those Russians who opposed the Bolsheviks during the Russian Revolution, **4**, 238

White Sands, in New Mexico, has been selected as the main rocket-testing ground in the U.S.A., **5**, 242

White Sea is a great inlet of the Arctic Ocean into northern Russia. It is almost shut in by the Kola Peninsula. Archangel, at the mouth of the River Dvina, is its chief port. Its high latitude causes it to be icebound for several months in the winter. It was the "Great Bay" mentioned by Chancellor, **2**, 305; **4**, 105

White Shark. This fish may grow to 40 ft. or more in length and is known as the Man Eater Shark, **1**, 210

White Ship. Name of the vessel in which the son and heir of Henry I was drowned, **2**, 97

White Star Line. See *Cunard White Star*.

White-thighed Colobus. A monkey, also known as the Guereza, which makes its home in Abyssinia.
Picture: **1**, 102

Whitethorn. Another name for Hawthorn (*q.v.*).

Whitethroat. A member of the warbler family about 5½ in. in length. Head, neck and back grey, with a white throat.
Special Colour Supplement: British Wild Birds, **1**, *between* 160 and 161 (Plate 4)

White Tower. An ancient portion of the Tower of London, it was built in the reign of William the Conqueror.
Picture, **3**, 9

White Walls of Old England. Name given to the high chalk cliffs which stand like sentinels on the south-east coast of England.
Shakespeare's Cliff is an example.
Picture **3**, 6

White Waters Ridge is a translation of Witwatersrand, the name of the goldfield of Johannesburg, **3**, 289

Whiting. Name of a food fish belonging to the cod family. It is found off British coasts.

Whitley Bay. Allied with Monkseaton, this seaside pleasure and health resort is very popular with Tynesiders. It is on the coast of Northumberland and is famous for its extensive greensward known as "The Links."

Whitman, Walt (1819-92). A brilliant American poet, he was a friend of Emerson, **7**, 153
Picture, **7**, 153

Whitstable. A watering place and holiday resort on the coast of Kent. It is famous for oysters
Picture: Packing Oysters for Market, **8**, 76

Whittington, Richard, who died in 1423, was three times Lord Mayor of London. The first reference to his cat appears to have been made in a play written about 1605

Whittle, Air Commodore Frank (born 1907), inventor of the British type of jet-propelled aeroplane, **7**, 400
Pictures: Power Unit of a Jet-Propelled Aeroplane, **5**, 217
A Jet-Propelled Machine—the Vampire in Flight, **7**, 399

Who Has Seen the Wind? A Poem by Christina Rossetti, **9**, 105

Who is it? A Poem by Enid Blyton, **9**, 93

Whortleberry. A dwarf shrub growing wild on moors and heaths. The berries are bluish-black and edible, **1**, 344

Whyalla is a centre of the iron ore industry. It stands on the Spencer Gulf of South Australia and has large smelting works, **3**, 238

Whymper, Edward (1840-1911). A gifted author and mountaineer. *Scrambles Among the Alps* was one of his works.

Wibbersley Hall. An old house near Lyme Hall, which is not far from Stockport in Cheshire. It was the birthplace of John Bradshaw who presided at the trial of Charles I, **3**, 411

Wick, noted for its fisheries, is a town and seaport of Caithness, in the north of Scotland.

Wickham, Sir Henry (1846-1928), was entrusted in 1876 with the task of transplanting the rubber tree from Brazil to India. He overcame many difficulties and was successful. He was an indefatigable pioneer and explorer, and established many rubber plantations, **6**, 324

Wicklow is a county of the eastern side of Eire noted for its mountains and fine scenery. It is mainly interested in agriculture
Wicklow is the county town. It is situated on the coast near Wicklow Head and has a good harbour.

Wicklow Hills is the name of a range of mountains in County Wicklow, Eire, **3**, 144

Widgeon. A winter visitor to our shores. Widgeons are members of the duck family and strong fliers. It is smaller than the common wild duck. Its head is red-brown, with cream crown, greyish-pink breast and blue-grey bill.

Widnes, Lancashire, is a centre of dyeing, though it also makes soap and has other industries, **3**, 86

Wieliczka. An important salt town of southern Poland near Cracow. Its mines were being worked in the eleventh century and run for miles underground at seven different levels, **4**, 128
Pictures: In the World's Most Amazing Salt Mines, **4**, 126
Carvings from Natural Rock-Salt, **4**, 128

Wiesbaden is a health centre of Germany. It is famous for its sulphur springs.

Wigan, Lancashire, is mainly a coal-mining centre, though it is also interested in cotton and other industries, **3**, 84 and 109

Wight, Isle of. Situated off Hampshire on the south coast of England, the island has an area of 147 square miles. Its chief town is Newport. It contains the River Medina and is famous for Cowes, Ryde, Sandown, Shanklin and other resorts, **3**, 37
Pictures: The Needles, **3**, 3
Yacht Races off Ryde, **8**, 103

Wigtownshire is a county at the south-west corner of Scotland. It contains Loch Ryan and has the Rivers Luce and Cree. Its interests are mainly agricultural, especially sheep rearing. The county is part of the Galloway district, its county town being Wigtown. The chief port is Stranraer.

Wigwam. Popular name for the permanent hut, conical or like a bee-hive in shape, used as a dwelling by the Red Indians of North America

Wihara is the name given in Ceylon to a structure containing images of a religious nature, **3**, 367

Wilberforce, William (1759-1833). Member of Parliament for his native city of Hull, he devoted his life to getting the slave trade abolished, **2**, 183

Wild, Frank (1874-1939), was a companion of Sir Ernest Shackleton during his dash for the South Pole, 1908, **2**, 372

Wild Arum. A common British hedgerow plant, bearing bright red berries. It is also known as cuckoopint or lords-and-ladies, **1**, 305
—the leaves contain sharp crystals which would injure the mouth of any animal trying to eat them, **1**, 352

Wild Barbary Sheep are large animals

with heavy horns. They are found in the parts of Northern Africa once called Barbary.

Wild Briars are used by gardeners as stock for growing the best rose bushes, 1, 287

Wild Carrot. A plant of the wayside often reaching the height of 3 ft. Flowers form on roundish flattened heads. The root has a strong carrot smell, for this weed was the forerunner of our garden carrot.

Wild Cat. See *Scottish Wild Cat.*

Wild Cherry. A tree often found in woodlands. It blossoms freely but the fruit is of little value, 1, 305

Wild Duck, or Mallard, is our best-known and most abundant member of the *Anatidae* family (which includes Geese, Swans and Ducks) in Britain. In winter it is found along the shores, on large sheets of water, and on marshes. Some are residents in this country while others are visitors, arriving in the autumn and staying until the spring.
Special Colour Supplement: British Wild Birds, 1, *between* 160 and 161 (Plate 4)

Wildebeest. Name given to two species of South African antelopes. One has a hairy black mane and tail, while the other is known as the White-tailed Wildebeest. The wildebeest is also known as the Gnu

Wild Geranium. A plant growing in waste, stony places and on old walls, known as Crane's Bill. It produces rich rosy five-petalled blossoms in pairs.
—as a pest in Brazil, 1, 338

Wild Goose. In Britain these large birds are mostly winter visitors. Theirs are the largest eggs produced in this country, 1, 171

Wild Hyacinth. Name often given to the common bluebell of the woods, 1, 304

Wild Rose. The largest of the British wild roses is the Dog Rose (*Rosa canina*) which forms a large bush with long arching branches. The flowers have five petals, pink in colour and notched. The Field Rose (*Rosa arvensis*) is very similar but the flowers are usually in clusters and the petals white, 1, 306
Picture: Wild Rose, 1, 297
Special Colour Supplement: British Wild Flowers, 1, *between* 304 and 305 (Plate 1)

Wild Strawberry. Similar in many ways to the cultivated variety, the wild strawberry is found on shady banks and in woodland clearings. It bears a small white flower which later form the so-called berry which becomes white or red as it ripens, 1, 303
Special Colour Supplement: British Wild Flowers, 1, *between* 304 and 305 (Plate 1)

Wild Thyme is the name of a lowly plant to be found growing on hillsides and cliffs. It bears very small mauve flowers which are rich in honey, and the whole plant is very fragrant.

Wild White Convolvulus. Name of a plant also known as field bindweed. It bears pink, funnel-shaped flowers, which close in wet weather and at night, or even when plucked. It attracts long-tongued insects because of its scent and the honey it carries, 1, 302
Picture: 1, 302

Wilhelm I. King of Prussia and first Emperor of Germany. He was born in 1797 and succeeded to the throne of Prussia in 1861. With the affairs of his country guided by Bismarck, he made himself conqueror of both Austria and France and was acknowledged Emperor of Germany in the Hall of Mirrors at Versailles in 1871. He reigned until his death in 1888, 4, 10

Wilhelm II, Emperor of Germany. See *William II.*

Wilhelmina, Queen of the Netherlands (born 1880) Succeeded to the throne in 1890. Escaped from Holland during the German invasion in 1940 and lived in England till peace came. For health reasons she relinquished her powers in favour of her daughter Juliana in September 1948, 2, 248

Wilhelmshaven is a town, port and watering place of Bremen Niedersachsen, Germany (British Zone) noted for its harbour which was at one time Germany's biggest naval base on the North Sea.

Wilkes, John (1727–99). An English politician who took an important part in maintaining English liberties. The government of his time tried to persecute him, but failed. He helped to establish the right of the electors to choose their own representatives and vindicated the freedom of the press.
—he founded the journal *The North Briton* in 1762, 9, 208

Wilkie, Sir David, R.A. (1785–1841). A foremost Scottish painter, he was born in Fifeshire.
Pictures: King Alfred and the Cakes, 2, 85

Wilkins, Sir Hubert (born 1888). An Australian airman who has carried out much Polar exploration by aeroplane. He is also a clever naturalist and brilliant photographer, 2, 364; 3, 244

Willebroek Ship Canal links Brussels with the sea and is mainly used by ocean-going barges, 3, 26

Willemite is a rare earth found on the Continent of Europe. It is used in the making of fluorescent light bulbs, 6, 158

William I (1027–87). Duke of Normandy, he invaded England in 1066 and became known as William the Conqueror, 2, 93, 404; 4, 6
—he granted London its first Charter, 8, 88
Pictures: His Landing at Pevensey, 2, 93
The Battle of Hastings, 2, 95
Colour Plate: 2, *facing* 100

William II (1056–1100) became King of England in 1087. He was the second son of William the Conqueror and was accidentally killed whilst hunting in the New Forest, 2, 96, 404; 3, 38

William II (1859–1941). German Emperor and King of Prussia, known as the Kaiser. He led his country into the War of 1914–18 at the end of which he fled to Holland where he died in exile, 2, 228, 232 *et seq.*, 412; 4, 157; 4, 77

William III (1650–1702). Prince of Orange, he and his wife Mary became King and Queen of England, Scotland and Ireland in 1689. Mary died in 1694, and King William III died in 1702, 2, 172, 408
Pictures: William of Orange Comes to Britain, 2, 174

William IV (1765–1837). King of Great Britain and Ireland, he came to the Throne in 1830. He was third son of George III. During his reign the Reform Bill was passed, 2, 210, 212, 411

William of Orange. See *William III.*

William of Sens was a famous architect. He was known as "French William" and rebuilt Canterbury Cathedral, 7, 299

William, Prince. Son of the Duke and Duchess of Gloucester, he was born in 1941.

Williams, Dr. Ralph Vaughan, O.M. (born 1872). One of our greatest British composers, much of his music is based upon folk-songs, 7, 192

Williamson, Henry (born 1897). Well known for his delightful writing on natural history and rural life. Author of *Tarka the Otter,* 7, 240, 271
Picture: 7, 240

William the Conqueror. See *William I.*

William the Lion (1143–1214). King of Scotland. He claimed part of the north of England, 2, 101

William the Silent, Prince of Orange-Nassau. He led the people of the Low Countries against the Spaniards, but was assassinated in 1584, 4, 20

Will-o'-the-Wisp, or Ignis Fatuus, is a light seen in marshy places, due to marsh gas, 9, 302

Willoughby, Sir Hugh (about 1500–54) Notable English explorer, he sought for the North-West Passage to India and China, 2, 304
Pictures: Willoughby's Three Ships, 2, 304
With Lapp Fishermen, 2, 305

Willow. An extensive family of trees usually found on river banks or in water meadows. Willow shoots are used for basket-making, and the best cricket bats are made from willow trunks, 1, 410. (*p.h.*)
Pictures: Willow Tree, 1, 406

Willow Biter. Name sometimes given to the little bird *Marsh Tit* (*q.v.*).

Willowherb. Very familiar wild plant growing about 4 ft. high with lance-like leaves and rosy-purple flowers, 1, 304
Special Colour Supplement: British Wild Flowers, 1, *between* 304 and 305 (Plate 3).

Willow Pattern. Famous design for china known and reproduced in this country since 1780. The pattern came originally from China.
Picture and Legend, 9, 203

Willow Wren. A small bird belonging to the Warbler group; sometimes known as the Willow Warbler and in some districts as "Peggy Whitethroat." It is one of the commonest British birds, smaller and less yellow than the Wood Wren. Its plumage is greenish yellow with wings rather browner. Its partly-domed nest is usually built on the ground.

WITH THE WOMEN'S FORCES



Graphic Photo Union.

During the last war the A.T.S., as it was then known, did great service on nearly all fronts. In 1948 they were renamed the *Women's Royal Army Corps* (*W.R.A.C.*) (see p. 410). Our photograph shows members of the Corps on parade at a ceremony in Hyde Park.



Keystone.

What the Wrens do for the Royal Navy, the *W.R.A.F.* (*Women's Royal Air Force*) (see p. 410) does for the R.A.F. Here are some girls of the W.R.A.F. getting into their parachute gear prior to a flight that is part of their training.

Wills, John, was one of the first men to cross Australia from south to north. He travelled with Burke and King in 1860 from Melbourne to Cooper's Creek and the Flinders River. Only King survived, **3,** 204

Wilmington, Delaware, is one of the main tobacco ports of the U.S.A., **4,** 293

Wilson, Dr E. A. A companion of Captain Scott in his Antarctic Expedition, **2,** 370, 375

Wilson, John (1785-1854). Scottish poet and essay writer. He wrote *Lights and Shadows of Scottish Life.* His pen-name was Christopher North.

Wilson, Richard (born 1714), an English artist who is said to have been the "father of British landscape," **7,** 76
Picture **7,** 76

Wilson, Woodrow (1856-1924). He was President of the United States of America from 1913-21 and is remembered for the part he played in leading America during the First World War and for the prominent part he played in making the peace treaties after that War and in creating the League of Nations, **4,** 126

Wilton, in Wiltshire, is noted for the well-known Wilton carpets. Hand-woven carpets were made here in Elizabethan days, and machinery was introduced only in comparatively recent times.
Pictures Weaving the Pattern on a Wilton Carpet, **6,** 365
Mechanical Carpet-Weaving, **6,** 366

Wiltshire is an English county in the southern midlands. Through it passes the upper reaches of the Thames and the Rivers Salisbury, Avon and Kennet. It is essentially a farming county noted particularly for its bacon and dairy produce. In the south it has much downland, including Salisbury Plain.
The county town is Salisbury, **3,** 36

Wimbledon is a town and residential centre of Surrey. It is famous for its Common and for its connection with Lawn Tennis Championships. It is the headquarters of the All-England Lawn Tennis Club.

Wimborne. A market town of Dorset. It is famous for its Minster Church, which has a chained library.
Picture. **3,** 39

Wimshurst Machine. An electrical device which makes miniature lightning, **6,** 142
Picture **6,** 143

Winchelsea, situated on a hill about nine miles from Hastings, is a town of Sussex. The old town, long since destroyed by the sea, was one of the Cinque ports.

Winchester. City of Hampshire and the county town, standing on the River Itchen. It has a magnificent cathedral, is an important military centre and was the ancient capital of England, **2,** 134; **3,** 34, 36
Pictures: Winchester Cathedral, **7,** 303

Winchester Minster. The monastic church at Winchester in which the Anglo-Saxon Chronicle was kept chained to a desk. It stood just to the north of the present cathedral, **2,** 87

Wind is air in motion. The main causes of the general circulation of the atmosphere have been established by the meteorologists and are dealt with in *The Weather and Its Ways,* **5,** 1 *et seq.*
—in relation to high and low atmospheric pressures, **5,** 5, 6
—different kinds of wind (khamsin, sirocco, etc.), **9,** 352
Picture: Wind Velocity Head, **5,** 14

Windermere is the largest of the English lakes. It is more than ten miles in length and gives its name to a Westmorland town at the lakeside which adjoins Bowness, **3,** 88

Wind in a Frolic, The. A poem by William Howitt, **9,** 106
Picture: **9,** 84

Windflower. A popular name for some kinds of anemone (*q.v.*).

Windhoek is the capital of South-West Africa and is about 170 miles east of Walvis Bay, **3,** 288

Windjammer. Popular term used for any kind of merchant sailing-ship
Picture. A Famous Windjammer, **8,** 39

Windlass. A machine for raising heavy weights by means of a rope or chain wound on to a horizontal drum or roller.
The drum is turned direct or through gearing, by hand or mechanical power.

Windmills were once extensively used in this country for grinding corn. Some had four and even six arms, carrying sails. As old mills fall into decay they are not replaced. (*p.h.*)
Pictures: Billingford Mill, near Diss, **3,** 60
Windmills Drain the Rich Farmland, **4,** 19
Photo-tone Supplement: The Continent of Europe, **4,** *between* 112 and 113

Window-pane Fish. A small flat fish so nearly transparent that it looks like glass, **1,** 223

Windrow is the name given to the long mounds into which newly-cut grass is drawn in a hayfield, **6,** 387

Windrush. A small Cotswold river, rising in Gloucestershire, which contributes its waters to the River Thames, **3,** 24

Windsor, Berkshire. On the south bank of the Thames 22 miles from London. A Royal borough.
—on the Thames Estuary in prehistoric times, **1,** 8

Windsor Castle was founded by William the Conqueror, but mainly built by Henry III; the State apartments were added by Charles II and George IV. This royal residence stands upon 12 acres of ground, **9,** 328
Pictures: Royal Pageantry, **2,** 256
Colour Plates: The Home of England's Sovereigns, **2,** *facing* 77
St. George's Chapel, Windsor, **7,** *facing* 369

Windsor, Duke of. Eldest son of King George V and Queen Mary, H.R.H. was born in 1894. He ascended the Throne as Edward VIII in 1936 but relinquished his kingship after a few months and married, **2,** 243
Picture: **2,** 226

Windsor, The House of. This has been the family name of our Sovereigns since 1917, **2,** 229 *et seq.,* 238

Windward Islands. A British colony forming part of the Lesser Antilles group in the West Indies. They are noted for their lime juice and fruits, 3, 334

Windward Passage is a strait separating Cuba from Hispaniola, **4,** 307

Wind? Who has seen the. A poem by Christina Rossetti, **9,** 105

Wine is a drink made from the fermented juice of grapes. Wines of many different kinds and qualities are made in many parts of the world, especially France, Germany, Italy, and Spain. Within the British Commonwealth, such countries as Australia and South Africa produce excellent wines. Famous wines include *Hock* (Germany), *Sherry* (Spanish and from the Commonwealth), *Chianti* (Italy), and *Burgundy* and *Champagne* (France). The actual making of the wine is a highly-skilled art based upon centuries of experiment and experience, **4,** 13
Pictures. Vineyards of France, **4,** 15
Wine in the Making, **4,** 351

Wingate, Major-General Charles Orde (1903-1944). He commanded the famous "Chindit" forces in Burma during the Second World War and directed airborne operations into the Burmese interior which was then held by the Japanese. He was killed in a plane crash in 1944, **2,** 254

Winged Bull. The ancient Assyrians, though mainly a military nation, reached a high standard in their buildings and statuary. The entrances to their great palaces were usually guarded by a pair of huge human-headed, winged bulls, carved in stone. One now in Chicago University stands 16 ft. high and weighs 40 tons. See *Assyria.* (*p.h.*)

Winged Fish. See *Fish with Wings*

Winged Seeds. How some seeds can fly through the air, **1,** 295, 375

Winnipeg is the capital of Manitoba, Canada, and one of the principal grain cities of the world. It includes meat-packing, clothing and sheet metal among its industries and is a great railway centre, **3,** 178 *et seq.*
—The name is also given to a lake and to a river of Manitoba, **3,** 169
Pictures. Grain from the Golden Plains, **3,** 179

Winnow. To rid grain of chaff and dirt by a strong current of air. Wheat is winnowed when threshed at harvest time.
The heavy grain falls to the ground, the light chaff being driven off by the draught.

Winsford is a town in the salt-producing district of Cheshire, **3,** 76

Wint, Peter de (1784-1849). An English artist who came of a Dutch family. He loved to paint flat stretches of river scenery under a summer sky, **7,** 86
Picture: **7,** 86

Winter. A Poem by William Shakespeare, **9,** 101

Winter Aconite. Early flowering garden plant growing from tuberous roots and grouped with the bulbs. It may be planted in shade.

Winter's Bark is the bark of a tree growing in South America. It is used as a medicine and was dis-

covered by a navigator named Winter, 1, 334
Winterthur is a town of Switzerland in the canton (province) of Zurich. It is a manufacturing centre, 4, 61
Wireless. See *Radio.*
Wireless Telegraphy Act (1904) established government control of wireless throughout the British Isles, 2, 225, 412
Wireless Telephony. Telling of the transmission of speech through space and how the work is carried out, 6, 215 *et seq.*
Pictures: For Sending "Beam" Wireless, 6, 215
Linking up the Whole World, 6, 216
At the Wireless Station, 6, 217
Tuning-in at Rugby G.P.O. Station, 6, 218
Wireless Valves. They are not only receivers but also amplifiers. They allow current to pass in one direction only
Wireless Waves and how they travel, 9, 307
Wireworm. A garden and farm pest about an inch in length. It is brownish-yellow in colour and has a hard skin. The worm is the larvæ of the click beetle (*q.v.*)
Wisbech, a centre of market gardening and fruit-growing, is a town of Cambridgeshire. It stands on the River Nene
Wisby is capital of the Swedish Island of Gotland in the Baltic. A very ancient port, believed to date back to the Stone Age, it is associated with the early German trading organisations that later developed into the great Hanseatic League, 4, 48, 73
Wisconsin is a north central State of the U.S.A. with Lake Superior on its north side. Much of its land is devoted to agriculture and it has extensive woodlands. The capital is Madison
Pictorial Map: 4, 291
Witan. A shortened form of the word Witenagemot (*q.v.*)
Witch. A sorceress or female magician who were supposed to be in league with demons in less enlightened times. They were believed to be able to travel through the air on a broom, to cause death or injury by spells and potions. Anyone accused of being a witch was persecuted by the Medieval Church
Witch Doctor is the name given to a medicine man by many native tribes. Witch doctors exercise powerful "charms" and are in some places prohibited by law.
Witches' Brooms. Clusters of twiggy growths often seen in birches, beeches and other trees. Their presence is due to the action of fungi and they are a form of gall.
Witches' Pouch. Another name for the wild plant Shepherd's Purse (*q.v.*).
Witches' Thimbles. Name given to the sea campion (*q.v.*).
Witch Hazel. Name of the winter-flowering shrub hamamelis. Its leaves and bark produce a healing oil of the same name.
Witenagemot, or the council of wise men, was the forerunner of our Parliament. It was appointed to advise the King in the times of the Anglo-Saxons, and continued for some time after the Norman Conquest in 1066, 2, 90, 9, 41
Witham on the Hill. Name of a place that once had a farm belonging to Hereward the Wake, 3, 66
Withies are pliant lengths of young willow shoots cut in a withy-bed. They are used for basket making and the bunching of market garden produce.
Withy-bed. A plantation of willows in a marshy situation from which the young growths or withies are cut.
Witney. An ancient market town of Oxfordshire standing on the River Windrush. It has been known for over 200 years for the high quality of its blankets, 3, 24
Wittenberg. A town of central Germany on the River Elbe and famous for its associations with the Reformation. Here, on December 10th, 1520, Martin Luther publicly burnt the Papal Bull condemning him for his teaching, 4, 74
Picture 2, 408
Witwatersrand is the name of the ridge on which the goldfield of Johannesburg stands, 3, 289
Pictures: Pneumatic Drills in a Mine, 3, 282
A Scene in the "City of Gold," 3, 284
A Skymaster over Johannesburg, 3, 289
Photo-tone Supplement The Union of South Africa, 3, *between* 304 and 305
W.L.A. means Women's Land Army, an organisation for women agricultural workers, founded 1939 and closed down in 1950
Woburn. A small market town of Bedfordshire. Nearby is Woburn Abbey, a seat of the Dukes of Bedford, 1, 320
Wolf. A dog-like animal found in Europe, parts of Asia and North America. The thick fur is grey in colour. They combine in packs when hunting for food. Once common in Great Britain, 1, 81
—the wolf that brought up Romulus and Remus, 2, 48
Picture: 1, 81
Wolfe, General James (1727-59). The British soldier who took Quebec (1759), 2, 186 *et seq.*, 409, 3, 156
Pictures: Troops Landing Before Louisberg, 2, 186
Storming the Heights of Abraham, 2, 188
The Death of Wolfe, 2, 189
General Wolfe's Headquarters, 3, 161
Wolfe's Cove. Point on the River St. Lawrence where British forces landed for the storming of Quebec, 2, 187
Wolf's Bane is another name for the perennial plant monkshood or *Aconite* (*q.v.*)
Wolf, Timber. See *Timber Wolf.*
Wollongong is an important iron and steel town of New South Wales, Australia, on the southern edge of the New South Wales Coal Basin, 3, 236
Wolseley, Garnet, Viscount (1833-1913). A British general. He commanded in Egypt in 1882 and won the Battle of Tel-el-Kebir. In 1884-85 he led the Gordon Relief expedition. Made Field-Marshal in 1894.
Wolsey, Thomas (1475-1530). A great English statesman, he figured prominently in the early part of the reign of Henry VIII. A cardinal, he built Hampton Court Palace which he presented to King Henry VIII in 1526, 2, 142, 406, 7, 316
Pictures: Cardinal Wolsey and Henry VIII, 2, 141
Wolverhampton, Staffordshire, is a busy industrial town and part of the Black Country, 3, 74
Wolverine is another name for the animal *Glutton* (*q.v.*)
Wombat. An animal found in parts of Australia, including Tasmania. It is somewhat bear-like. Belonging to the opossum family, the young are carried in pouches by their mothers.
Picture 3, 247
Women's Voluntary Services made a wonderful contribution to Britain's war effort as volunteer part-time auxiliaries. The W.V.S. continued in being after the War, 2, 397
Wonderful Circus, The. A Tale for Nursery Folk, 5, 293
Wood, Mrs. Ellen (1814-87). English novelist. Under the name Mrs. Henry Wood she wrote *East Lynne* and about thirty other books
Wood Anemones are wild flowers bearing white, star like blossoms, 1, 304
Colour Plate 1, *between* 304 and 305 (Plate 4)
Wood Barkers are used to strip tree logs of their bark before they go to the pulping mills
Picture 3, 170
Wood Betony. Familiar wild plant of the woodlands bearing purple flowers
Woodbine. A popular name for the wild honeysuckle
Wood-boring Beetles. Pests which destroy miles of pine trees in the forests of America, 1, 317
Woodbridge. An ancient market town of Suffolk. It stands on the River Deben
Wood Buffalo Park is one of the National Parks of Canada. It is situated in the Fort Smith district of the North-West Territories
Woodchuck is the name given in America to the squirrel-like animal known as a *Marmot* (*q.v.*)
Woodcock. A game bird of the Plover family. It comes to this country for the winter months. It is about 14 in. in length, with a long straight bill. The plumage is reddish brown above and pale brown underneath, mottled with darker colouring
Woodcut. An engraving made on wood, a print made from such an engraving. Until pictures were produced with the aid of photography, the woodcut was the chief means of illustrating books. It has become popular again in recent years
Wooden Horse of Troy, The. A Tale from the Greek, 5, 368
Wood, Heaviest and Lightest. Cocus wood is probably the heaviest and Balsa the lightest, 9, 374
Woodlark. A bird which lives in small

colonies in woods, its song is richer in tone than the skylark but less varied being mainly a repetition of two or three sweet notes. It is smaller than the skylark, has a shorter tail, and the crest is rather more pronounced.

Wood Lily is another name for *Trillium* (*q.v.*).

Woodpecker. A bird which has feet that can be used for clinging to a vertical surface, two toes pointing forward, two backward. A long tongue which darts forward to capture insects is characteristic of the group. The three known in Britain are the Greater Spotted Woodpecker and the Lesser Spotted Woodpecker which have black and white plumage and crimson crown. The Greater is about 9 in. long, while the Lesser is 5 to 6 in. long.

The Green Woodpecker is the largest of the three, about 12 in. Its plumage is dark green above and yellow or yellowish green below, with red crown and nape.

Special Colour Supplement: British Wild Birds, **1**, *between* 160 and 161 (Plates 2 and 4)

Wood Pigeon. One of our most familiar wild birds, uttering a soft "coo-oo"; plumage mostly slate-colour. Also known as the Ring-dove.

Special Colour Supplement: British Wild Birds, **1**, *between* 160 and 161 (Plate 1)

Wood Pulp, from which enormous quantities of paper are made, is largely produced from the conifer trees of Canadian forests. The work is carried on in pulp mills, **3**, 167 *et seq.*; **4**, 37, 48

Pictures: Sorting Logs, **3**, 167

Making a Raft, **3**, 168

On Their Way to the Saw Mills, **3**, 169

Turning Trees into Newspapers, **3**, 170

From Canada's Forests, **3**, 173

The Sawmills at Sandviken, **4**, 36

Lumber at a Swedish Mill, **4**, 350

Timber for Britain? **4**, 351

Timber Starts its Journey to the Mills, **4**, 380

Newsprint from Canada, **4**, 383

See also *How Paper Is Made*, **6**, 329 *et seq.*

Woodruff. A wild plant growing in shady places. It bears white flowers and may reach a height of 1 ft.

Wood Rush. A familiar perennial wild plant with short leaves and brownish flowers. 2 ft. in height.

Wood Sage. A wild plant usually found in woodlands. Its leaves grow in pairs and it produces yellowish flowers, **1**, 333

Wood, Sir Henry Joseph (1869–1944). He was one of the best known of modern musical conductors. Conductor of the Promenade Concerts from 1895 until his death in 1944.

Wood Sorrel is a wild plant with pretty white flowers lined violet, **1**, 304

Special Colour Supplement: British Wild Flowers, **1**, *between* 304 and 305 (Plate 1)

Woodstock is a small town in Oxfordshire. Near by are Blenheim Palace and Park presented by the nation to the Duke of Marlborough, **3**, 24

Woodville, Richard Caton. A British-American artist, his pictures of war subjects are particularly well known. His painting of Captain Cook is reproduced.

Picture: **2**, 311

Wood Violet. Sweetly scented wild flower, white or mauve, **1**, 303

Woof, or weft, is the name given to crossways threads in weaving, **8**, 385

Wookey Hole is about 3 miles from Wells in Somerset and consists of caverns formed by the dissolving action of water upon the limestone rock. Here the water re-emerges having travelled some distance underground from the village of Priddy, **3**, 58

Wool is the natural covering of the sheep and other animals such as llama, angora goat, etc. It was Britain's wool trade that formed the mainstay of her early trading prosperity. While much home-grown wool is still produced and manufactured into cloth, the greatest wool producing country in the world is Australia, particularly of fine grade merino wools. The manufacture of woollen cloths remains one of Britain's staple industries. See *The Romance of Wool*, **6**, 357 *et seq.*; also *An Australian Sheep Station*, **3**, 214 *et seq.*

Colour Plate: Sheep Shearing in Australia, **6**, 333

Photo-tone Supplement. Australia, **3**, *between* 240 and 241

Woolf, Virginia (1882–1941) British novelist and critic. *Jacob's Room*, *Orlando* and *A Room of One's Own* are among her best-known works.

Woollen Cord, as used on knitted garments, can be made by means of frame knitting, **8**, 381

Pictures: A Cord Made by One Person, **8**, 382

The Strands Ready to be Tied, **8**, 382

Woolley, Sir Leonard (born 1880). Famous British archæologist, he was associated with Lawrence of Arabia, **2**, 382

Woolly Aphis, often seen on apple trees in the form of whitish, cottony deposits. Another name for *American Blight* (*q.v.*).

Woolly Balls are easily made and form a handcraft for little folk, **8**, 377

Pictures: How to Start Making a Woolly Ball, **8**, 378

How the Woolly Ball is Cut, **8**, 378

Woolly Rhinoceros. See *Rhinoceros, Woolly.*

Wool Press. This is an appliance used for pressing sheep's wool into tight bales for transport.

Picture: **3**, 216

Woolsack. The seat in the House of Lords occupied by the Lord Chancellor.

Picture: **3**, 17

Wool Weaving on Canvas is an interesting handcraft for little folk, **8**, 377

Picture: **8**, 377

Woolwich, standing on the Thames, is part of London. It is famous for its dockyard and arsenal.

—visited by Florence Nightingale, **2**, 217

Woolworth Building is one of the great skyscrapers of New York, the largest city of the U.S.A., **7**, 329

Picture: **4**, 277

Women's Land Army was formed in 1939 to help in agricultural work during the war years. It ceased to recruit new members in 1949 and its formal closing-down was officially fixed for November 1950.

Woomera is a place in Australia about 200 miles north of Adelaide, selected for experiments in rocket flying, **5**, 242

Woomeras are spear throwers used by the Australian aborigines, **3**, 226

Worcester. A town in the Cape Province of the Union of South Africa where there are large canneries.

Picture: **3**, 297

Worcester, Battle of (1651) was fought after the coronation of Charles II at Scone and won by Cromwell. Charles escaped to France after the battle, **2**, 164, 407

Worcestershire is a county on the western side of England through which flows the Severn, Stour, Avon and other rivers. It is interested mainly in agriculture and grows much fruit and also hops. It has coalfields and other mineral wealth. The county town is Worcester, which has a magnificent cathedral.

Wordsworth, William (1770–1850) English poet, notable for his great love of nature. He was born in the Lake District and settled there about 1799. In 1843 he became Poet Laureate, **2**, 411, **3**, 88, **7**, 142

Pictures: **3**, 91, **7**, 143

Poem: A March Day, **9**, 88

Wordsworth's Seat is a rock near Rydal Water associated with the great poet

Picture: **3**, 91

Worker Bees. These bees collect nectar from flowers, feed the grubs and usually work themselves to death, **1**, 259

—they have two pairs of wings, **1**, 260

Picture: **1**, 264

Worker Wasp. This wasp carries out many useful tasks in the colony, **1**, 267

Working Sand Models. How to make a double-sided motive model, **8**, 364. With *Diagrams.*

Workington is an industrial town and seaport of Cumberland. It has local collieries and is interested in iron and steel.

Works, Ministry of. British government department which has control of the royal palaces and parks, government buildings and property throughout the country. It was first founded in 1832 and became a Ministry in 1940.

Workshops of the Creator is the name given to the nebulæ seen in the skies, the theory being that in this part of the universe new stars and new star systems are being formed, **8**, 177

World Minster is the translation of Jag Mandir, the name of the island on which a palace is built on Lake Pichola, India, **3**, 342

World's Fair was the name of a great exhibition held in Chicago in 1893 to celebrate the 400th anniversary of the discovery of America, **2**, 276

World's View, The. Name given to the view from the Matopo Hills in Southern Rhodesia, **3**, 296

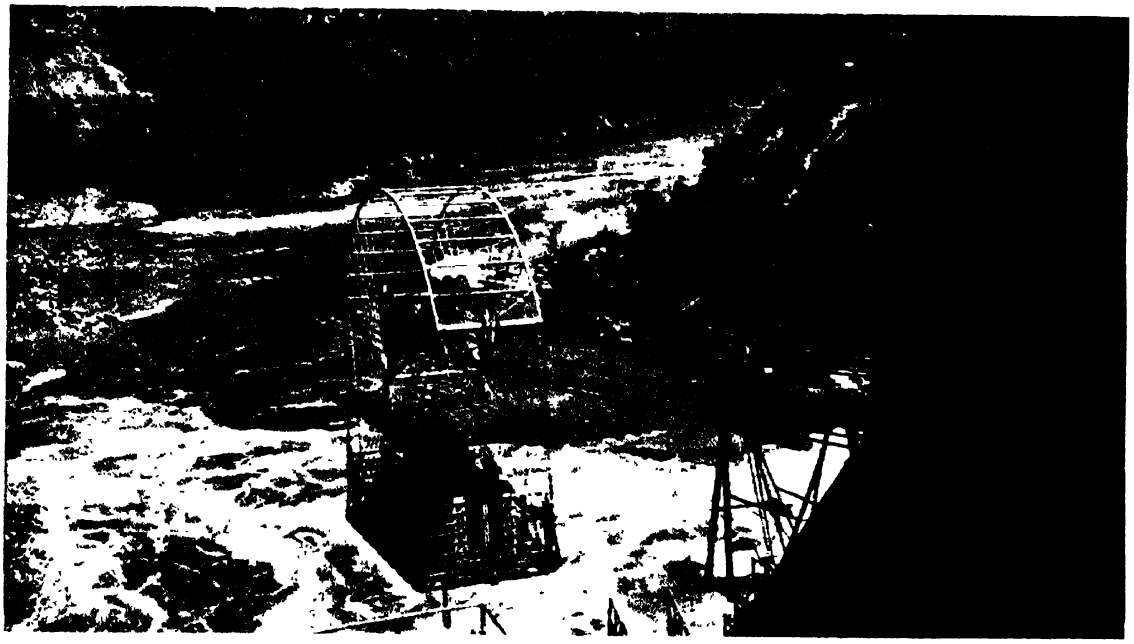
World, The. Often used as an alternative for Earth. The story of the World in the beginning and how

WHEN THE W.R.N.S. FLY



Topical Press.

The *W.R.N.S* (see p. 410), the Women's Royal Naval Service, or " Wrens " as they are popularly called, do a variety of jobs in their work with the Royal Navy. Here, for example, are some naval airwomen about to board R.N. planes for radio testing.



Canadian National Film Board

A *whirlpool* (see p. 402) is a circular eddy or current caused by the sweeping of other currents through narrow channels. Below Niagara such a whirlpool is caused by the tremendous currents set up by the Falls, and our photograph shows this whirlpool with the Spanish Aero-car of the Niagara Parks Commission crossing Niagara Glen.

animal life appeared is told in *The Story of the World in the Days of Long Ago*, **1**, 1 *et seq.*

World War, The First. See *Great War of 1914–18.*

World War, The Second. See *Second World War.*

Worm-casts. Name given to the little hills worms make on the soil surface. In a year the worms in one acre of garden would bring to the top about 10 tons of soil. See *Earth Worms*

Worms is an ancient and historical city of Rheinpfalz, formerly in Hesse, Germany. It stands on the River Rhine. Associated with Luther.

Worms, Diet of (1521). Before this assembly (Diet) at the German town of Worms, Luther justified his beliefs. Diet was the name given to the parliaments of the Holy Roman Empire, **2**, 142

Wormwood. Name of a family of plants the leaves of which are bitter. Tansy (*q.v.*) is one such plant

Worstead, a village near Norwich, gave its name to worsted when East Anglia had flourishing woollen industries, **3**, 62

Wort. The word used in olden times to describe almost any kind of plant, **1**, 300

Worthing is a Sussex seaside resort and holiday centre. Between the sea and the South Downs it has a great fruit-growing district, **3**, 36

Wouldhave, William (1751–1821) of South Shields was the discoverer of the self-righting principle for boats. With Henry Greathead he had the honour of inventing and building the first life-boat in 1789, **8**, 65

Woundwort, Hedge. See *Hedge Woundwort.*

W.R.A.C. Women's Royal Army Corps, so named in 1948 in place of the former A.T.S., established in 1938 as the Auxiliary Territorial Service, a women's organisation which did splendid work on nearly every front during the Second World War. In the First World War a similar organisation was known as the Women's Army Auxiliary Corps (W.A.A.C.)
Picture: **10**, 405

W.R.A.F. These initials stand for Women's Royal Air Force, whose members were formerly known to us as WAAFs. The W.R.A.F. is an auxiliary of the Royal Air Force and performs a wide variety of jobs thus freeing more men for combatant duties.
Picture: **10**, 405

Wrangel Island is within the Arctic Circle, off the north-east coast of Siberia and is named after the Russian explorer who discovered it in 1849.
Photo-tone Supplement: With the Eskimos of the Arctic, **2**, *between* 368 and 369

Wreck. Vessel which has been stranded or so badly injured as to be helpless.
Pictures: Wrecked on the Goodwin Sands, **8**, 67, 69
A Gallant Ship Goes Down, **8**, 63

Wren. Name given to various birds of the Passerine family. See *Common Wren, Golden-crested Wren, Willow Wren.*
Special Colour Supplement: British Wild Birds, **1**, *between* 160 and 161 (Plate 2)
Colour Plate: British Birds Eggs, **6**, *facing* 396

Wren, Sir Christopher (1632–1723). The greatest of English architects, Wren was also an astronomer and surveyor. His main achievement was the building of St. Paul's Cathedral, **2**, 170, 178; **7**, 310
Pictures: Charles II and Wren at St. Paul's, **2**, 167
Photo-tone Supplement: Famed in England's Story, **2**, *between* 128 and 129

Wrench. Name given to several kinds of spanner, a tool used to tighten nuts on bolts, to grip pipes, and similar tasks. (*p.h.*)

Wrexham is a town of Denbighshire, the centre of many industries, **3**, 75

Wright, Orville (1871–1948) and Wilbur (1867–1912). American flying pioneers, the first airmen to make an actual flight in a power-driven heavier-than-air machine. The aeroplane they built was driven by a 4-cylinder petrol motor of 12 h.p. and the first flight was made on December 17th, 1903, in the U.S.A. King Edward VII saw them fly in France soon afterwards, **2**, 225; **5**, 190 *et seq.*
Picture. The World's First Power-Driven Man-Carrying Aeroplane, **5**, 183

Writing is the art of communicating ideas on some more or less durable surface, by means of signs intelligible to the eye, with a view to their transmission to others. The earliest method of writing was by means of pictures and from that our alphabet was gradually evolved.
Our grammar and spelling are also the result of long development through many centuries. A sound knowledge of these and of the customs and conventions to be observed in writing letters is an important part of our education. See *The Magic Art of Writing*, **8**, 179 *et seq.*
Reading, Writing and Arithmetic for Tiny Folk, **9**, 117 *et seq.*
Pictures: How Our Alphabet Began, **8**, 179
An Early Hornbook, **8**, 181
Ancient Implements of Writing, **8**, 183
A Scholar of the Middle Ages, **8**, 189
Before the Printing Press, **8**, 195
The Writing of the Great Charter, **8**, 201
Papyrus on Which the Ancients Wrote, **8**, 207

W.R.N.S. These initials stand for Women's Royal Naval Service whose members are popularly called Wrens. The W.R.N.S. is an auxiliary of the Royal Navy and the work it does makes more men available for sailing and fighting the ships and aircraft of our fleets. It was first formed in 1917–19 and revived in 1939.
Picture: **10**, 409

Wroclaw, formerly known as Breslau, is the capital of Silesia in the Western Territories of Poland. This region was German before 1945, and is rich in industry. Wroclaw itself is an important textile centre, **4**, 128

Wrought Iron can be forged hot into any shape, rolled out, drawn into wire and bent even when cold without cracking, **6**, 42, 52

Wryneck. A bird found in wooded places, so named from the snake-like way in which it twists its neck. About as big as a lark, it comes to us at the same time as the cuckoo and is known as the "Cuckoo's Mate."

W.S. means Writer to the Signet. This is the Scottish equivalent to an English solicitor.

Wuchang is one of the three cities which together make the important centre of Hankow in the Hupeh province of China, **4**, 243

Wuhu is a port on the Yangtze River in the Anhwei province of China. It is one of the largest rice-marketing towns in that country, **4**, 241

Wurtemburg. At one time a Kingdom in southern Germany, it later became a State of the German Reich. It is now divided into Wurtemburg-Baden and Wurtemburg - Hohenzollern. Chief rivers are the Neckar and the Danube. Stuttgart is capital of Wurtemburg - Baden, Tubingen, capital of Wurtemburg-Hohenzollern.

W.V.S. stands for Women's Voluntary Services (*q.v.*)

Wyandotte. Name of a popular breed of domestic poultry, **8**, 317

Wych Elm. A tree growing to a height of from 80 ft. to 100 ft. with a stout trunk. The two sides of the leaves from the centre are not the same in size, **1**, 402
Pictures: Buds of the Wych Elm, **1**, 288
Leaf of a Wych Elm, **1**, 289
Wych Elm in Summer, **1**, 322
Wych Elm in Winter, **1**, 323
Wych Elm, **1**, 399

Wycliffe, John (*c.* 1325–84) Great English preacher and scholar. The first to inspire the Reformation in this country. (Also spelt Wyclif), **2**, 128, 159, **9**, 339
Picture **2**, 140

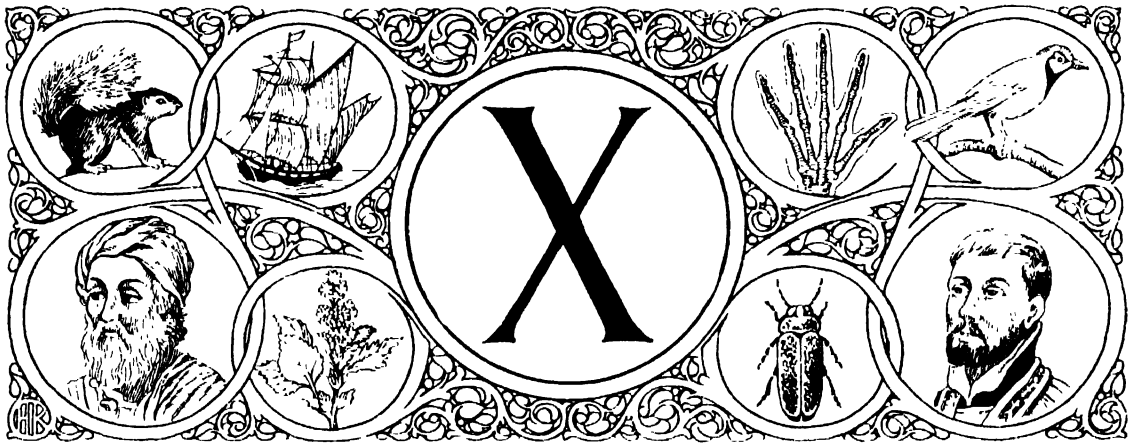
Wye. A market town of Kent about 10 miles from Canterbury.

Wye is the name of a river which rises in Plynlymmon and enters the Severn at Chepstow. It is upwards of 120 miles in length and noted for its delightful scenery, **3**, 75 and 102

Wylie was the black servant of Eyre and accompanied his expedition from Adelaide to Western Australia. Of this expedition only Eyre and Wylie survived, **3**, 204

Wyndham is a port of northern Western Australia. Here are the meat factories so important to the cattle raising industry of the surrounding district.
Pictorial Map: **3**, 242

Wyoming is a State of the U.S.A. interested in stock-raising, general agriculture and in its wealth of timber and minerals including coal. The capital is Cheyenne.
Pictorial Map: **4**, 290



Xanthe is a town of Greece in the district of Thrace

Xantheine is the yellow colouring matter in flowers.

Xanthium. A plant of the daisy family. Its seed-pod has strong, curved hooks so that it sticks into the fleeces of sheep, **1**, 371. (*p.h.*)

Xanthura. A kind of American jay which has a yellow tail (*p.h.*)

Xanthus was the chief city of ancient Lycia in Asia Minor. In 545 B.C. it was besieged by the Persians and later fell into ruins. In more recent times archæologists have done much excavating on the site of the city

Xantippe, or Xanthippe. The scolding wife of the great Greek philosopher, Socrates. Her name has become a term of reproach for quarrelsome wives (*pron.* Zantippy).

Xavier, St. Francis (1506-52). A Spanish missionary, known as the "Apostle of the Indies." He was one of the founders of the Society of Jesus. He worked in Italian hospitals and later founded the first Jesuit mission in India. He also visited Japan and established a mission there. Returning to Goa, for a time, he was making further voyages when he was stricken with fever and died. (*p.h.*)

Xaymaca. The native name for Jamaica. It means "island of fountains," **3**, 397

Xebec. A small three-masted vessel, used only in the Mediterranean. It is lateen-rigged and was at one time greatly favoured by the notorious corsairs of Algiers. (*p.h.*)

Xenon. A chemical element (symbol Xe). It is a colourless, invisible, odourless gas, very rare, but minute traces of it are found in the atmosphere. It was first discovered in 1898.

Xenophanes (*c.* 570-480 B.C.). A Greek philosopher, born at Colophon in Asia Minor, he went to Elea in Italy about 540 B.C. and founded a school there. He attacked the old religion because its gods were guilty of wicked actions. (*p.h.*)

X is the twenty-fourth letter of our alphabet, and one of the least used. Every word in an English dictionary that begins with X is of foreign origin, and in most cases derived from the Greek.

We could dispense with X altogether, since at the beginning of words it could be replaced by Z, and in the middle or at the end of a word by KS. We could write "Xenophon" and "mix" as "Zenophon" and "miks," without altering the sounds of these words.

As a Roman numeral, X stands for 10. We may here sum up the Roman numeral values mentioned under various letters by giving the date 1866 as it would appear in a Latin inscription MDCCCLXVI.

Xenophon (430-354 B.C.). Greek writer and general. A pupil of Socrates. Led one of the greatest military retreats in history from Cunaxa, **4**, 202

Xerus. Name given to certain animals, members of the squirrel family, found only in Africa. About the same size as the European squirrel, they do not live in trees but are usually found in rocky places, making their homes in holes or in clefts and crannies in the rocks (*p.h.*)

Xestobium. One of the wood-boring beetles which does great damage to furniture and wooden structures, particularly in their larval stage (*p.h.*)

Xerxes (485-465 B.C.). King of Persia. He bridged the Dardanelles, cut a canal near Mount Athos, and led his army to Athens, his fleet being defeated at Salamis (*pron.* Zerkseez), **2**, 24, 27, 31

—he obtained his horses from India, **1**, 93

Pictures: Bridges over the Dardanelles, **2**, 24

His Marble Throne, **2**, 25

Spies before the King, **2**, 26

The Empty city of Athens, **2**, 31

Xingu is the name of a river of Brazil. After a course of some 1,300 miles, it flows into the Amazon

Xochimilco is about a mile from Mexico City, the capital of Mexico, and is noted for its floating gardens.

Picture **4**, 297

Xosa. The name of a language spoken by some of the peoples of the Bantu race of Negroes of South Africa and so used to describe those peoples. It is also known as Kaffir, **3**, 280

X-Rays, or Rontgen Rays (so named after their discoverer, Professor W. K. Rontgen) are similar to wireless and light rays, but much shorter. They can penetrate matter which is opaque to ordinary light. The rays are also a valuable aid in radiotherapy as healthy tissue is more resistant to X-rays than malignant growths, which may be successfully attacked and destroyed by the rays, **6**, 227. (*p.h.*)

Pictures: Pens under X-Rays, **6**, 227

The Foundations of the Hand, **6**, 228

Rays that Penetrate Matter, **6**, 229

A Peep into a Penguin, **6**, 230

An X-Ray Tube and Its Result, **6**, 231

X-Rays in Industry, **6**, 232

Xylem. The hard woody part of the stem of a plant

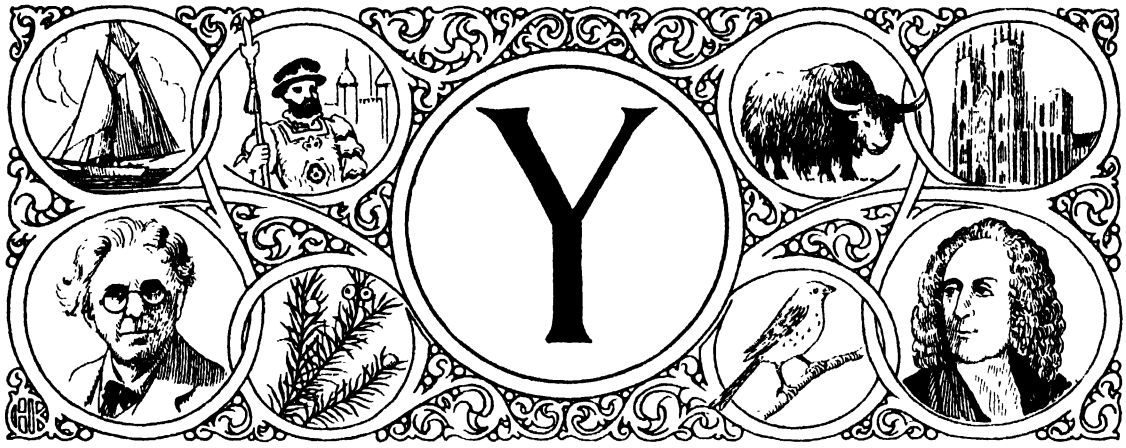
Xylene is a liquid resembling toluene and is found in coal-tar. It is used as a solvent and in making aniline dyes.

Xylograph. Another term for a woodcut (*q.v.*); an impression or print from a wood block. Xylography is the art of engraving on wood.

Xylonite is an alternative name for celluloid (*q.v.*) one of the earliest of modern plastics.

Xylophone. A musical instrument dating from very early times. The flat pieces of wood of which it consists are tuned to a scale, and are struck with two small hammers.

See *Musical Instruments.*



Yacht. A vessel propelled by sails, steam, electricity or motive power other than oars, and used for private pleasure. The majority of yachts are light sailing-vessels, built and rigged mainly for racing. (*p.h.*)
Pictures: Off Ryde, Isle of Wight, **8**, 103

Yacht, A Model Racing. How to Make, **8**, 357. With *Diagrams.*

Yak is the name of an animal of the ox tribe found in Tibet, parts of China and in the Soviet Union. It is used when domesticated for riding and as a beast of burden, **4**, 238. (*p.h.*)

Yakutsk is one of the northern republics of the Soviet Union. It is one of the gold-producing countries and has a capital city of the same name.

Yale Lock. How it works, **9**, 345

Yale University. Third oldest of American universities and one of the most important. It is named after Elihu Yale (1649–1721) who was an early benefactor. The University is at New Haven, Connecticut.
Picture: **4**, 281

Yalta. Town of south Russia, situated on the coast of the Crimea, 30 miles south-west of Sevastopol. It is a popular watering-place and was the meeting-place in February 1945 of Churchill, Stalin and Roosevelt at which the Yalta Declaration was signed concerning the speedy ending of the war and the Allies' plans for peace, **2**, 256

Yam. A tropical plant much cultivated in the West Indies and China. It has large, fleshy roots which, when cooked like potatoes, serve as a vegetable.

Yampi Sound is a stretch of water in the Buccaneer Archipelago, off the north-west coast of Western Australia. Its islands contain vast iron ore deposits, **3**, 238
Picture: **3**, 239

Yanchep National Park is near Perth, the capital of Western Australia, and is noted for its caves, **3**, 219

Yangtze is the greatest river of China. It rises in Tibet and flows across central China to enter the Yellow Sea near Shanghai, **4**, 240

Yankee was the nearest pronunciation the North American Indians could get when they tried to say "English" and the name is now frequently used in England when speaking of Americans, **9**, 357

Y is the twenty-fifth letter of our alphabet, and one of the sibilants. We use it both as a consonant, as in "year" and "yet"; and as a vowel, as in "cry" and "deny." It does not appear as a letter in the Greek alphabet, but our capital Y was used in that alphabet as the symbol for capital U.

In chemistry, Y is the symbol for the element yttrium. In Y.M.C.A. (Young Men's Christian Association), and R.Y.S. (Royal Yacht Squadron) it appears as an abbreviation.

Yard is the British standard linear measure. A foot was originally supposed to be the length of a man's foot, and inch comes from a Latin word meaning a twelfth, **9**, 404

Yare is the name of a Norfolk river which enters the sea at Great Yarmouth, **3**, 59

Yarmouth. See *Great Yarmouth.*

Yarmuk. A tributary of the River Jordan which it joins a little south of Galilee. Here is the greatest hydro-electric station in Palestine, **4**, 186

Yarra is the name of a river in Victoria, Australia. The city of Melbourne stands on the Yarra where it enters Hobson Bay, **3**, 232

Yarrow is a familiar wild plant with flowers resembling miniature daisies, **1**, 306

Yarrowee is a river of Victoria, Australia. Gold was found along the river at a place later to become famous as Ballarat (*q.v.*), **3**, 204

Yarrow Water. A river of Selkirkshire, Scotland. It is famous in Scottish literature.

Yarumal is a town of Colombia on the Western Trunk Highway.
Picture: **4**, 334

Yawl. A small sailing-boat with a mizzen mast behind the tiller; a small fishing boat.

Yeames, William Frederick (1835–1918). A prominent British artist, he was a great painter of historical subjects.
Pictures: Prince Arthur and Hubert, **2**, 103
The Dawn of the Reformation, **2**, 140
"When Did You Last See Your Father?" **2**, 160

Year. A period of time. The Calendar year is 365 days but the Equinoctial or Tropical year is 365 days, 6 hours, 13 minutes, 53 seconds. To balance this difference every fourth year consists of 366 days and is known as a Leap Year, but the last year of a century, although divisible by four, is not a Leap Year unless its number is divisible by 400; 1800 and 1900 were not Leap Years; 2000 will be a Leap Year. See *Calendar.*

Yeast. A material used to cause bread to rise. It is a form of fungus, **1**, 359

Yeats, William Butler (1865–1939). Irish poet and playwright. *The Wind Among the Reeds* is one of his well-known poems, **7**, 154. (*p.h.*)
Picture: **7**, 154
Poem: The Lake Isle of Innisfree, **9**, 85

Yellow Balsam, which is a member of the geranium family, at the slightest touch flings forth its seeds like shots from a gun. For this reason the plant is named Touch-me-not.
Picture: **1**, 371

Yellow Bunting. Name sometimes given to the Yellow-hammer (*q.v.*).

Yellow Dead-Nettle. Familiar wild plant with yellow flowers, **1**, 304

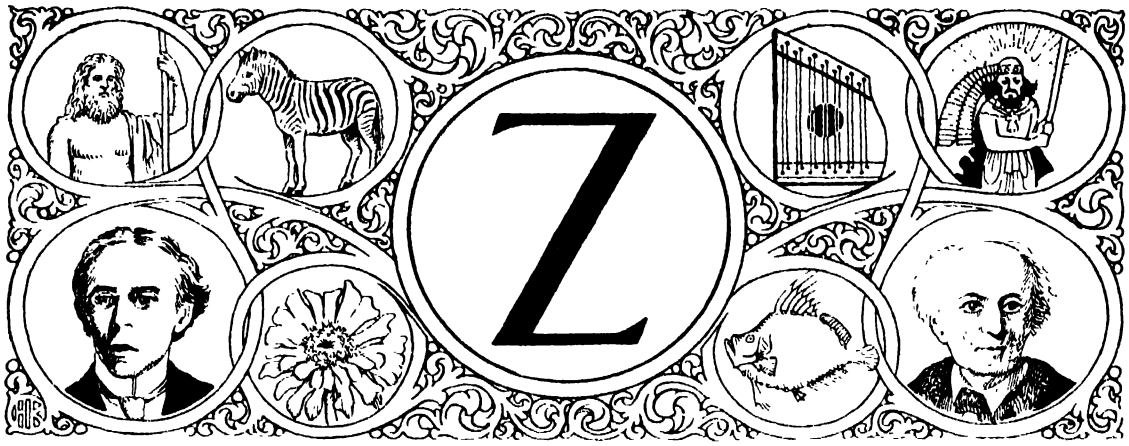
Yellow Emperor. See *Huang Ti.*

Yellow-hammer. A common British bird, preferring the hedgerows and open country to the woods. It is about 6 to 7 in. long and the head, throat and underparts are bright yellow, streaked with brown. Its song has been interpreted as "Little bit-of-bread-and-NO-cheese." (*p.h.*)
Special Colour Supplement: British Wild Birds, **1**, *between* 160 and 161 (Plate 1)

Yellowknife is on Great Slave Lake in the North-west Territories of Canada. It is a goldmining centre, but silver is also mined there. The town was founded in 1935.

Yellow Loosestrife. Wild plant found growing in damp places to a height of 3 ft. It has long, pointed leaves and bright yellow flowers.

Yellow Pimpernel. A wild plant growing in damp places and bearing star-like blossoms, **1**, 304
Yellow Rattle. A wild plant with lance-shaped leaves, **1**, 302
Yellow River is another name for the Hwang-Ho, one of the great rivers of China. See *Hwang-Ho.*
Yellow Sea is the name given to a sheet of water between the coast of North China and Korea.
Yellow Stonecrop grows mostly on rocks and old walls and produces bright yellow blossoms. It has thick, fleshy leaves.
Yellowstone National Park, in Wyoming, is a great National Park of the U.S.A. It has geysers and canyons and is a sanctuary for native animals, **4**, 272
Pictures. Yellowstone National Park, **4**, 285
Pictorial Map **4**, 290
Photo-tone Supplement: United States of America, **4**, *between* 272 and 273
Yellowstone River, a tributary of the great Missouri, passes through the Yellowstone Park, **4**, 272
Picture **4**, 285
Yellow Toadflax. See *Toadflax.*
Yellow Vetchling is a wild plant, a member of the vetch family. Its leaves are poisonous, **8**, 244
Yemen [illegible] of southern Arabia, it is ruled by an Imam and produces Mocha coffee, **4**, 205
Yenbo is a seaport of Arabia, on the Red Sea. It figures in the story of Lawrence of Arabia, **2**, 383
Yenesei is a lengthy river of Siberia. It empties into the Arctic Ocean, **4**, 110
Yeoman. English word which originally meant countryman, or one who cultivated the land. In Chaucer's time they were retainers, but later the word came to mean a small freeholder or a farmer who rented his land.
Yeomen of the Guard. A body of veterans who form a personal guard to the Sovereign. They are often known as "Beefeaters," as are the warders of the Tower of London, **9**, 361. (*p.h.*)
Picture: **3**, 9
Yerba Maté is a variety of tea produced in the South American Republic of Paraguay.
Yerkes, Charles (1837-1905). A famous American financier who made a fortune from street railways and had much to do with the development of the London underground lines. He built the Yerkes Observatory.
Yerkes Observatory is situated on Lake Geneva, Wisconsin, U.S.A.
Its 40-inch telescope probably shows 100,000,000 stars, **8**, 174
Yes Tor is the name of a high part of Dartmoor, rising to 2,028 ft., **3**, 44
Yew. One of the longest-lived of all British evergreen trees. It belongs to the conifer family and may live to be 1,000 years old. The wood was used for the long bow, **1**, 416; **9**, 373. (*p.h.*)
—berries scarlet and poisonous, **1**, 344
Pictures: **1**, 316, 332, 346, 413
Y.M.C.A. means Young Men's Christain Association, an international organisation for promoting the all-round welfare of young men. It rendered great service during the two World Wars.
Ymuiden is a seaport of North Holland. Its locks admit ships to the canal for Amsterdam, **4**, 32
Yogi. The name given to a holy man or mystic in India. The religion and way of life he follows is called Yoga, **3**, 336, 355
Yokohama is the chief port of Japan, situated on the south side of Honshiu Island, **4**, 255
Yolk-sac. A portion of the egg of a fish which contains nourishment for the baby when it is hatched, **1**, 224
Yonge, Charlotte Mary (1823-1901). An English novelist, who wrote over a hundred books, *The Heir to Redclyffe* and *The Dove in the Eagle's Nest* being among the most popular.
Yonge Street is the principal thoroughfare of Toronto, Canada, **3**, 192
York, a city, is the county town of Yorkshire. It has walls and buildings dating from Roman times; a magnificent Minster; and is an important railway and manufacturing centre, **3**, **84.** (*p.h.*)
Photo-tone Supplement: York Minster, **2**, *between* 128 and 129
York Cottage is a royal residence on the Sandringham estate in Norfolk.
York House is the name of a royal residence that forms part of St. James's Palace, London.
Yorkshire is the largest of the English counties and is divided into three Ridings, the East, West and North, each of which forms a separate administrative county. The Cleveland Hills provide iron ore and building stone and there are important coalfields in the West Riding. Sheffield, Leeds, Bradford, Hull, Huddersfield and Middlesbrough are among the largest towns. Nearly 4½ million people live in the county, **3**, 80 *et seq.*
Pictures Sheffield, City of Steel, **3**, 80
The Lovely Countryside of the Busy North, **3**, 81
Quarry Hill Flats, Leeds, **7**, 336
Yorkshire Coach-horse. A breed of fast trotting horses brought into being in the coaching era, **1**, 97
Yorktown, Virginia, U.S.A. Here Lord Cornwallis surrendered to Washington (1781). With this incident the American War of Independence practically concluded, **2**, 195
Picture: **2**, 194
Yosemite National Park is in California, U.S.A. It has wildly picturesque scenery and some magnificent waterfalls.
Picture: **4**, 284
Photo-tone Supplement: In the Yosemite Valley, **4**, *between* 272 and 273
Youghal. Seaside resort and market town in Co. Cork, Eire. Here, at Myrtle Grove, Sir Walter Raleigh planted the first potatoes to be grown in the British Isles, **1**, 309
Young, Edward (1683-1765). English poet. He wrote *The Complaint, or Night Thoughts,* by which he is best remembered. (*p.h.*)
Young, Francis Brett (born 1884). A modern novelist, he wrote *Portrait of Clare* and *Brother Jonathan,* **7**, 261
Young, Thomas (1773-1829). A famous British physician, he was the first to describe and explain astigmatism, a defective condition of the human eye.
Young Pretender. See *Prince Charles Edward.*
Yeovil. A town of Somerset and a centre of glove manufacturing. Nearby is Montacute House, one of England's stately mansions, **3**, 412
Picture: Montacute House, **7**, 319
Ypres is an ancient city of Belgium, famous for its woollens and other textile goods. Though brought to complete ruin, it was held by Britain and her Allies through the War of 1914-18, **2**, 235, 240, **4**, 19
Yssel Lake. See *Ijssel Lake.*
Ytterbium. A chemical element (symbol Yb). It belongs to the group of rare metals, closely resembling each other, which are found in monazite and other rare minerals.
Yttrium. Chemical element (symbol Y) is the most basic of the rare earth metals.
Yuan Shih-Kai (1859-1916) A Chinese statesman who took a leading part in the revolution of 1911-12. He was elected president of the new Republic of China, when the ancient monarchy came to an end in 1912.
Yucatan is a peninsula of Central America in the Gulf of Mexico. It was the site of the mysterious Maya Empire, **2**, 278; **4**, 298, 388
Yucca, an ornamental plant of which there are several varieties, many of them bearing noble spikes of flowers. Also known as Adam's Needle.
Yugoslavia is a federal republic of south-eastern Europe consisting of Serbia, Croatia, Slovenia, Bosnia and Herzegovina, Macedonia, and Montenegro. Its chief river is the Danube Its capital is Belgrade. Total population numbers more than 15,750,000 It is chiefly an agricultural country, but it has mineral resources including coal, iron, and copper ore, **4**, 93 *et seq.*, 156, 362
Pictures. Village Scenes in Yugoslavia, **4**, 101
Yukon. (1) A Territory of north-western Canada adjoining Alaska on the west and reaching to the Arctic Ocean, **3**, 158
(2) Name of a river which flows through the area. It was in the basin of this river that the gold rush of 1897 set in, **3**, 164, 165. See *Klondike.*
Yunnan is the most south-westerly province of China Its capital is Kunming, on the famous Burma Road (*q.v.*).
Picture **4**, 240
Yurt. A tent used on the steppes of the Soviet Union. It is made of felt faced with leather, **4**, 112, 238
Y.W.C.A. means Young Women's Christian Association, an organisation for the welfare of girls and women, founded in 1887 when two older societies, both founded in 1855, combined together.
Y Wyddfa is the loftiest peak in the Snowdon group, 3,560 ft. in height, **3**, 103



Z is the twenty-sixth and last letter of our alphabet. Like X, and Y, it is used comparatively seldom. It is one of the sibilant or hissing letters, in some cases being almost a voiced "s" as in "zeal" or a voiced "sh" as in "azure." In some words such as "realize" an "s" is often substituted in its place and the word written as "realise." In German Z is pronounced TS, and this sound is given to it when we use German words as they stand, such as Zwingli, the name of a religious reformer of the sixteenth century. A person is said to know a subject from A to Z if he knows it from beginning to end, that is, very thoroughly.

Zab. See *Great Zab River.*

Zacatecas is the name of a large state of Mexico and of its capital. The district is rich in minerals.

Zagazig is a town of Egypt. It is situated on the delta of the Nile and is a cotton trading centre.

Zagreb a town of Yugoslavia and capital of the federal unit (province) of Croatia in the north-west of the country. It stands on the River Sava. It was a city in the days of the Romans, and has a Gothic cathedral and university, **4**, 94

Zagros. The name of a mountain range of Iran (Persia), **4**, 200

Zahle is a town in the mountains of Lebanon about thirty miles east of Beirut.
Picture. **4**, 175

Zama. A city in the Roman colony of Numidia, in North Africa. Scene of the defeat of Hannibal and the Carthaginians by the Romans under Scipio in 202 B.C., **2**, 71, 402

Zambezi. A great river of Africa which rises in Northern Rhodesia and flows down and across the African continent to the Indian Ocean. It is 1,600 miles long and has the Victoria Falls on its course, **2**, 290, 333; **3**, 275, 286, 296 *et seq.*
Pictures: At the "River of Good Tidings," **2**, 291
Two Views of the Victoria Falls, **3**, 298
Colour Plate: The Victoria Falls in Southern Rhodesia, **3**, *facing* 277
Photo-tone Supplement. Roaring Waters and a Silent Bell, **3**, *between* 304 and 305

Zamzammah is the old gun outside Lahore Museum on which Kim is found sitting in Kipling's story, **3**, 338

Zanesville is a city of the State of Ohio, U.S.A.

Zangwill, Israel (1864–1926). Well-known Jewish writer. His novel *The Children of the Ghetto* laid the foundations of his success and was followed by other stories of Jewish life. (*p.h.*)

Zante is an island of Greece, in the Ionian Sea. Wine, olives and currants are exported.

Zanzibar. The name given to the protectorate of Zanzibar and Pemba which is ruled by an Arab sultan under British protection. Zanzibar and Pemba are both islands off the east coast of Africa. Their most important product is cloves, the greater part of the world supply coming from here. There is also an important coconut industry. The population is about 250,000, mostly African Moslems, **2**, 338; **3**, 374 *et seq.*; **4**, 380
Pictures On the Island of Cloves, **3**, 376

Zaporozhye is an important town on the River Dnieper in Russia. Near it is the famous dam which was destroyed during the Second World War, but has since been rebuilt. Zaporozhye is an industrial town, but in its vicinity there are collective farms.
Picture: **4**, 121

Zara is a port of Italy, on the Adriatic.

Zaria is a province of Nigeria. It has a capital of the same name.

Zealand is the name of the largest of Denmark's islands. It lies in the approaches to the Baltic Sea, the Sound being on one side and the Great Belt being on the other. It is on this island that Copenhagen, the Danish capital stands. It should not be confused with Zeeland which is a province of Holland, **4**, 46

Zebra. A donkey-like animal, native to South Africa. The true or Mountain Zebra has black and white stripes. There are also Burchell's and Grevy's zebras, **1**, 94. (*p.h.*)
Pictures. Mother and Baby, **1**, 60
The True Zebra, **1**, 94
Photo-tone Supplement The Land of the Ostrich and Zebra, **3**, *between* 304 and 305

Zebra Wolf. See *Thylacine*

Zebu. An animal also known as the Brahmin Bull. It has a hump on its back and large ears. Native to India, it is held as sacred by Hindoos.

Zedekiah was the name of the last King of the Hebrew Kingdom of Judah. He was 21 when Nebuchadnezzar placed him on the throne and he ruled for eleven troubled years before he was made prisoner in 586 B.C. and taken as a blind captive to Babylon

Zeebrugge. A seaport of Belgium and the scene of a great British naval exploit in 1918 when the German base there was destroyed.
A train ferry for goods only connects Zeebrugge with Harwich, **3**, 59, **4**, 26

Zeehan is a mining centre of Tasmania, Australia

Zeeland is a large province of Holland having the town of Middelburg for its capital.

Zeil, The. One of the busiest streets of Frankfort-on-Main, Germany.
Picture. **4**, 73

Zeller, Eduard (1814–1908). A German philosopher and theologian. He became professor of theology at Berne and later of philosophy at Heidelberg and Berlin. His greatest work was the *History of Greek Philosophy*, still regarded as a standard authority. (*p.h.*)

Zempoaltepec, Mount. A mountain in Mexico from which it is possible to see both the Pacific Ocean and the Gulf of Mexico, **4**, 298

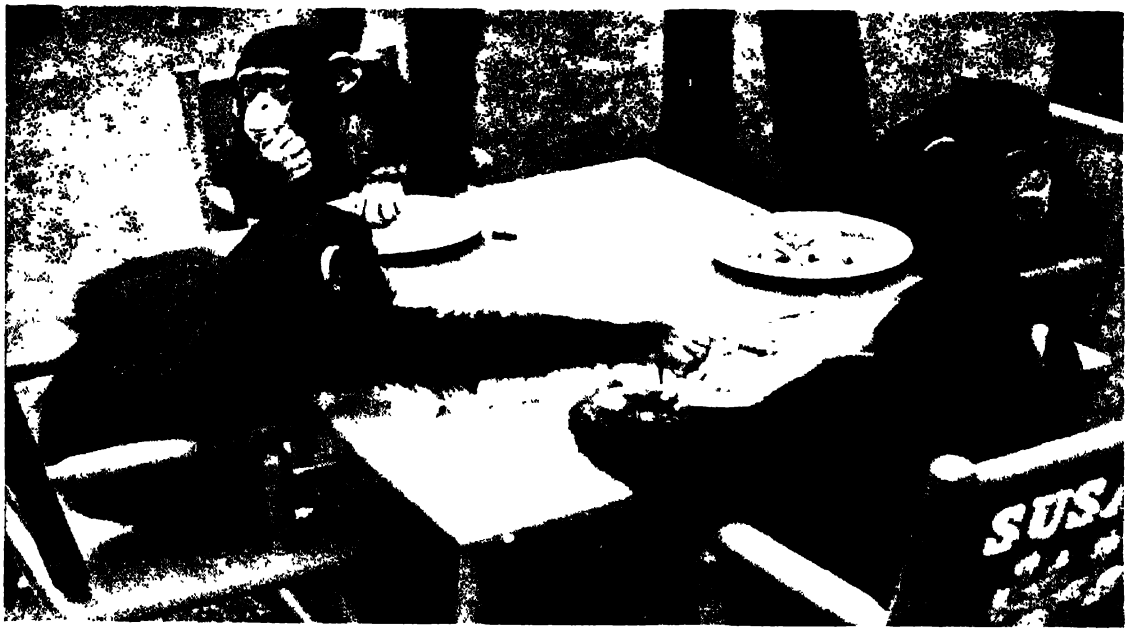
Zenopsis. Name of a sea-fish, a member of the same family as the John Dory, to which it bears close resemblance. (*p.h.*)

Zeppelins, named after their inventor, Count Ferdinand Zeppelin, were large airships used in the Great War of 1914–18 and afterwards for trans-ocean voyages, **2**, 232, 239; **4**, 70; **5**, 186

Zermatt is a small town of Switzerland, at the foot of the Matterhorn. It is a great centre for Winter Sports, **4**, 62

Zero. Mathematical symbol which

TEA TIME AT THE ZOO



Keystone

One of the most popular sideshows at London Zoo, the chimpanzee's tea-party, was revived after a lapse of ten years in 1940 when So-so, Susan, Sally and Compo, all between the age of two and three years, went into training. In this picture Sally has forgotten for a moment all her good manners and while Susan is looking elsewhere Sally is grabbing more than her share



News Chro

At *Whipsnade* (see p. 402) is the country section of the London *Zoo* (see p. 416), and here is Pauline, a handsome *tigress* (see p. 374) with her two cubs, Wendy and Pamela. Wendy, nearest her mother, is the docile one, but wide-eyed Pamela is more of a handful. Pauline, at the moment, appears to be mildly annoyed or suspicious of the photographer's nearness.

signifies the absence of quantity or number. It is represented by 0.

Zeus (*pron.* Zus) was the predominant god of the Greek mythology, being known as "the Father of the Gods." He was the counterpart of the Roman god Jupiter, and was pictured as a sky-god with lightning in his hand. The statue of Zeus at Olympia was one of the seven wonders of the ancient world, **5**, 85; **7**, 292; **9**, 19. (*p.h.*)
Picture: Statue of Zeus, **7**, 286

Zhukoff, Grigory Konstantinovich, Marshal of the Soviet Union. Born in 1895, he led the Russian armies which fought their way into Berlin in 1945, **4**, 85

Zifta is the name of a great dam or barrage across the River Nile below Cairo, **4**, 191

Ziggurat. This is the name for a terraced temple of the kind built by the ancient peoples of Babylon and Assyria, **4**, 200

Zimbabwe, Great. See *Great Zimbabwe.*

Zina Dizengoff Place is a large open place in Tel Aviv. It is named after the wife of the first mayor of this city which was built by Jewish settlers in Palestine.
Picture: **4**, 173

Zinc is a chemical element (symbol Zn) which is found in a number of ores, blende being the main source of supply. Its chief modern use is in the production of galvanised iron. It is also used as an alloy with other metals, brass, for example, being an alloy of copper and zinc, **6**, 121 *et seq.*
Pictures: Charging the Retorts, **6**, 121
Roasting the Zinc Ore, **6**, 122
Crushing Mills and Cokers, **6**, 123
Casting Zinc Slabs, **6**, 124

Zinc White, or oxide of zinc, is now largely used in making paint instead of white lead, **6**, 124

Zinnia. A half-hardy annual plant bearing very showy blooms, **8**, 278 (*p.h.*)

Zipaquira is a town of Colombia and the centre of a rich cattle district. It is noted for its remarkable salt mines.

Zirconium. A rare metallic element (symbol Zr). It is found chiefly in the mineral zircon and in certain rare earths.

Zither. A musical stringed instrument, shaped like a shallow box about 20 in. by 10 in. and 3 in. deep, and having a round opening in the upper sound board. (*p.h.*)

Zittau is a town of Saxony, Germany. Its chief industry is the manufacture of textiles.

Zlin. See *Gottwaldov.*

Zocalo is the name of the chief square in Mexico City, the capital of Mexico, **4**, 299

Zodiac, Signs of. See *Signs of the Zodiac.*

Zoea. Name given to a baby crab, **1**, 236
—how it swims, **1**, 236
Pictures: **1**, 237

Zola, Emile (1840-1902). Great French novelist, he was born in Paris and his work greatly influenced the French novel of the nineteenth century. *L'Assommoir* and *Germinal* were two of his famous books. In 1898 he published *J'accuse,* a strong attack on those who had persecuted Dreyfus, **4**, 16

Zomba, at the south of Nyasaland, is the capital of this country.

Zones of Occupation. Germany was divided into four areas, or zones, after the Second World War, each of which was occupied and administered by the troops and officials of one of the victorious allies. Eastern Germany, where it was not handed over to Poland (*q.v.*) became the Russian Zone; north-western Germany became the British Zone; southern Germany became the American Zone; and south-western Germany, the French Zone. Others of the Allies helped by providing troops in one or other of the Zones. Berlin, the former German capital, was itself divided into four Zones, one to each of the Allies mentioned above for purposes of occupation and administration, **4**, 78

Zonguldak is a Turkish town on the shores of the Black Sea important for its coal mines which are operated by the Turkish government, **4**, 159

Zoo is the short word generally used for Zoological Gardens (*q v.*).

Zoological Gardens. Area set apart for the exhibition and study of living animals. There are several of these gardens or parks in different countries of the world but perhaps the best known are those in Regent's Park, London, popularly known as the Zoo. These gardens were founded in 1828 and occupy 20 acres. Mammals, birds and reptiles from all parts of the world are housed here. There is also an aquarium and an insect house. The country section of the Zoo is at Whipsnade (*q.v.*).
Picture: Tea Time at the Zoo, **10**, 415

Zoological Stamps. Postage stamps depicting various animals, birds and other creatures.
Pictures: **4**, 401

Zoroaster, or Zarathustra (600 or 1000 B.C. ?). A Persian prophet and founder of the old Persian religion. The date of his birth is uncertain, but he was supposed to be the first of the Magi or Wise Men and to be divinely inspired. (*p.h.*)

Zouaves. Name given to a French infantry corps first raised in Algeria in 1831. The regiment now consists entirely of Frenchmen but the half-Arab dress is still retained. They have a high reputation as fighting men.

Zouella Gate is one of the gates of the old city of Cairo. Near it are typical ancient houses which have seen much of Cairo's story.
Picture: **4**, 196

Zouglodon, a small-headed prehistoric whale common on American coasts millions of years ago. It is probable that the sperm whales of today have descended from them.
Picture: **1**, 16

Zucchi, Antonio. A Venetian painter, he married the artist Angelica Kaufmann and they settled in Rome, **7**, 83

Zug is a district of Switzerland having as its capital a place of the same name.

Zuga is a river of Africa which widens into Lake Ngami, **2**, 333

Zugspitze is the highest peak of the Bavarian Alps. It is near the noted winter sports of Garmisch-Partenkirchen and is ascended by two mountain railways. It is 9,721 ft. high, **4**, 84

Zuider Zee. See *Zuyder Zee.*

Zulus form a splendid race of African people, tall and well built. They live in kraals and are successful farmers. Zululand, where they live, is a district of Natal in the Union of South Africa, **3**, 280, 307 *et seq.*
Pictures: The Ricksha "Boy," **3**, 304
The Men of Zululand, **3**, 306
A Zulu Constable, **3**, 307
Some Zululand Types, **3**, 308
Photo-tone Supplement: With the Zulus of Today, **3**, *between* 304 and 305

Zulu War, 1879, was fought between the British and Zulus, the latter under Cetewayo. At the battle of Ulundi, the Zulus were defeated, **3**, 280, 307

Zurich is a canton or province of Switzerland. The chief town of the canton is also called Zurich and it stands on the shores of a lake of the same name. It is an important textile manufacturing city and is the largest town in Switzerland
Picture: **4**, 61

Zuyder Zee was originally a broad inlet of the Dutch coast. For some time it has been the scene of great reclamation work and more and more land has been won from the sea. The actual expanse of water now consists of the large lake known as the Ijssel or Yssel, **4**, 30, 32; **9**, 314
Also spelt Zuider Zee.
Picture: **4**, 29
Colour Plate: In the Harbour of Marken Island, Holland, **4**, *facing* 60

Zwickau is an important German textile manufacturing town of the Saxony coalfield. It is the birthplace of Schumann, the great composer, **4**, 84; **7**, 177

Zwingli, Ulrich (1484-1531). A Swiss religious reformer who led the Protestant cause in Switzerland at the same time as Luther in Germany, though he differed with Luther on certain matters. He was killed in battle at Kappel.

A Pictorial Supplement of the Coronation of Queen Elizabeth II



Ceremonies and Celebrations throughout the British Commonwealth



Topical

THE SUPREME MOMENT OF THE CORONATION

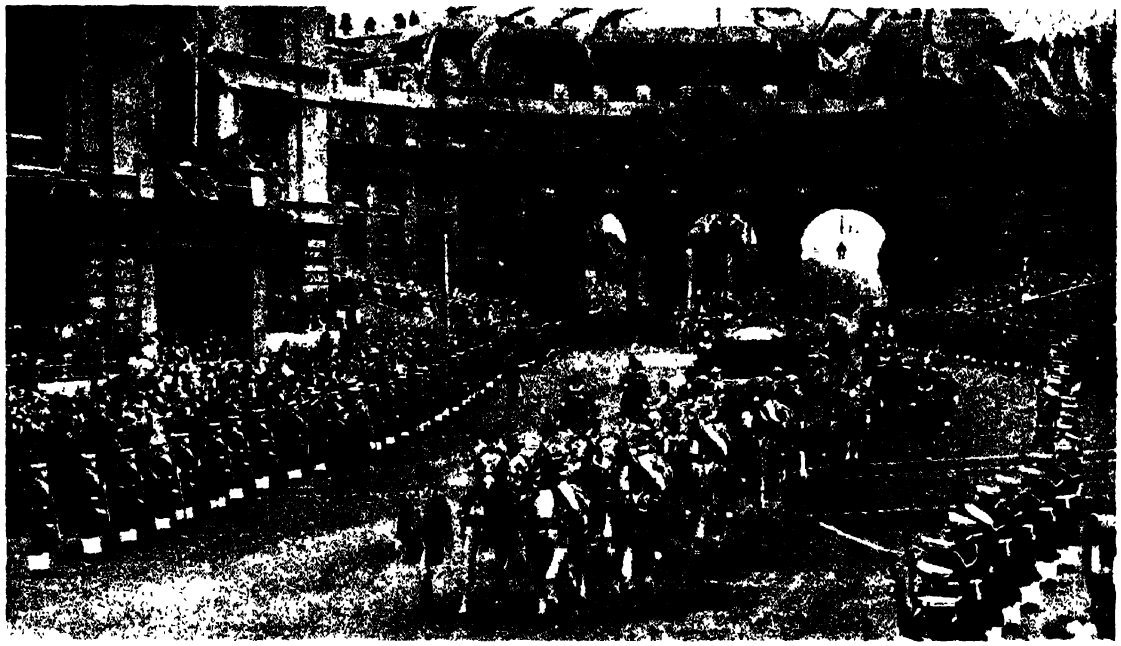
On June 2nd, 1953, Her Majesty Queen Elizabeth II was crowned in Westminster Abbey as the rulers of her country had been crowned since William the Conqueror. For all its splendour and solemnity the service is simple and full of meaning, and the supreme moment was reached when, as seen above, the Archbishop of Canterbury placed the St. Edward's Crown on the Queen's head.

IN THE NEW ELIZABETHAN ERA

THROUGHOUT the long history of Great Britain and of the slowly-evolved British Commonwealth of Nations the part played by her kings and queens has had its abiding influence. It was the spirit of the first Elizabeth that inspired her sailors to go forth and explore new lands. The outcome to-day is a great Commonwealth of Nations, a brotherhood of peoples under the same Sovereign and inspired by a common loyalty to the same ideals.

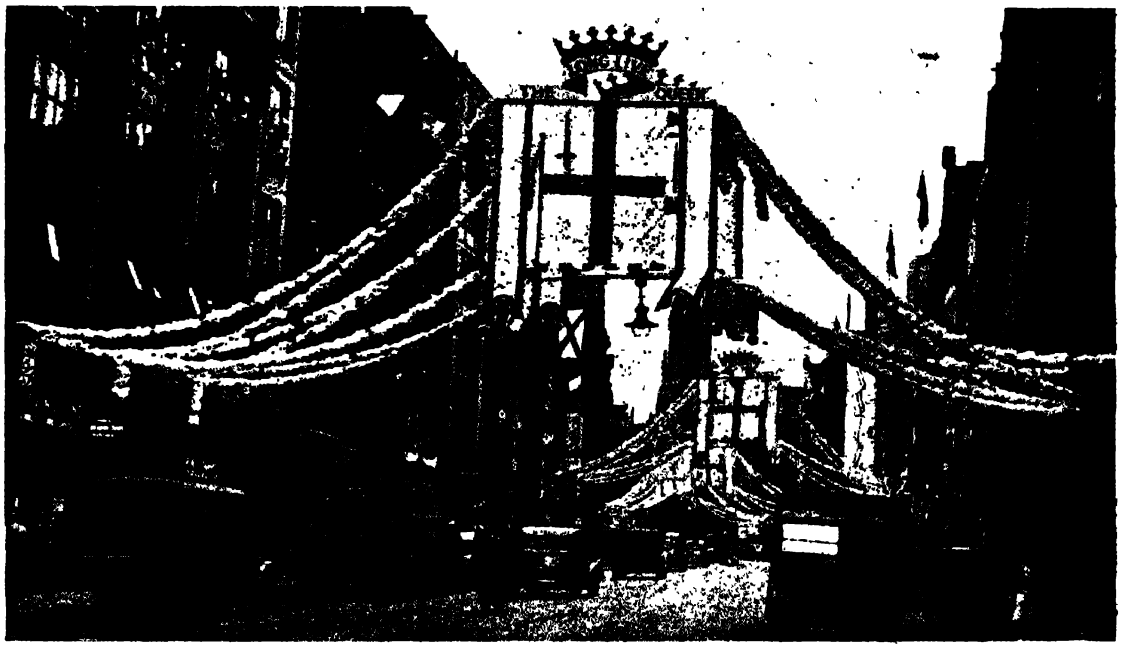
At the Coronation of Queen Elizabeth II representatives from all the nations that form the British Commonwealth were present and heard the question asked by the Archbishop of Canterbury just as it had been asked at many earlier Coronations: "Sirs, I here present unto you Queen Elizabeth, your undoubted Queen: Wherefore all of you who are come this day to do your homage and service, Are you willing to do the same?" And their answer, broadcast throughout the world, was echoed by many millions of loyal subjects, as it is echoed by us to-day: "God save Queen Elizabeth."

PAGEANTRY AND DECORATION



P N 1

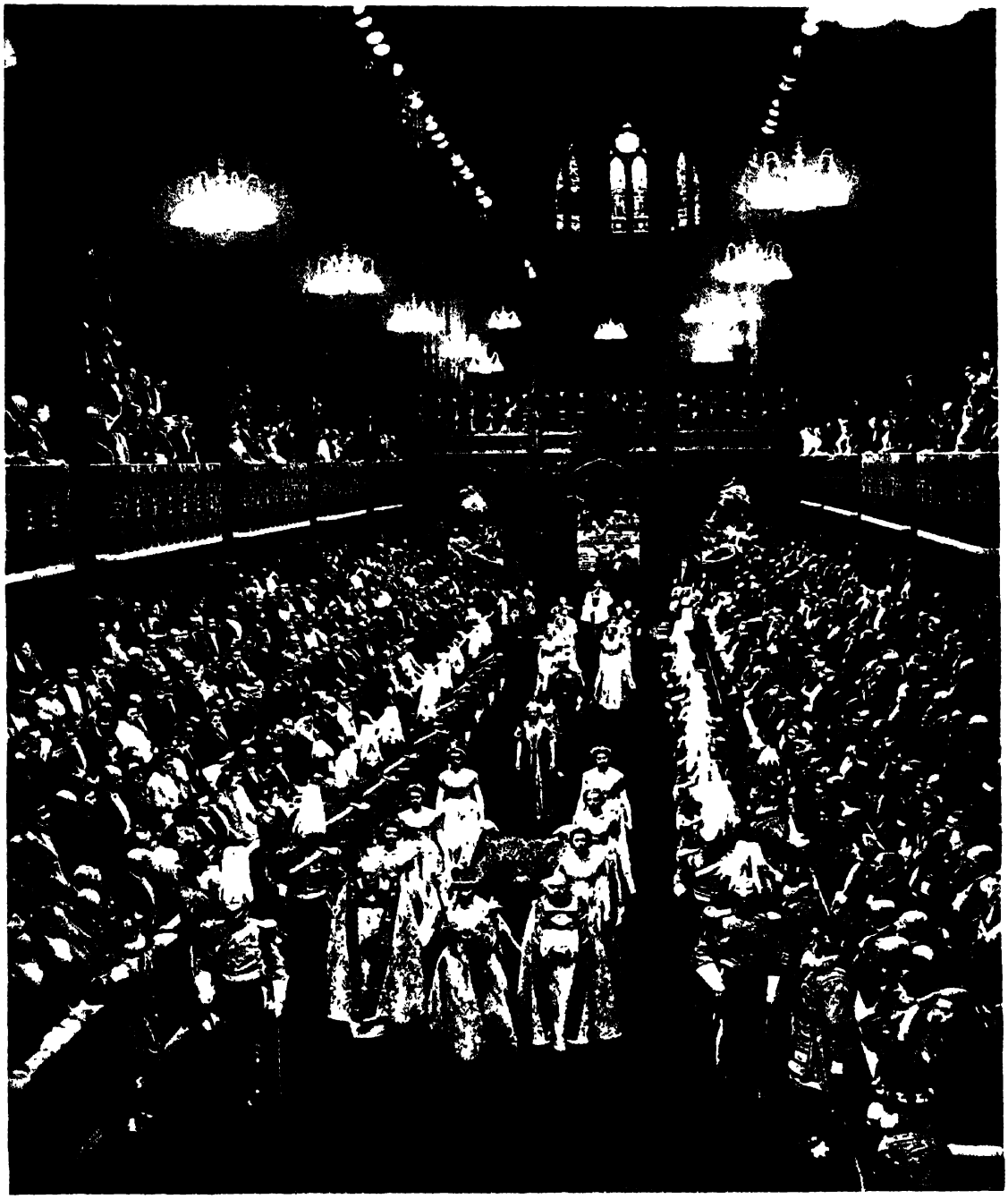
In this photograph is seen part of the Coronation Procession from Buckingham Palace to Westminster Abbey. The Queen and the Duke of Edinburgh riding in the State Coach have passed through Admiralty Arch and are on their way across Trafalgar Square to Northumberland Avenue.



Central Press.

Every city, town and village throughout Britain was decorated for Coronation Day and the drab streets of the City of London wore a gay and colourful appearance throughout the festive period. Here is the scene in Fleet Street, famed as the home of many newspaper offices, in its Coronation garb.

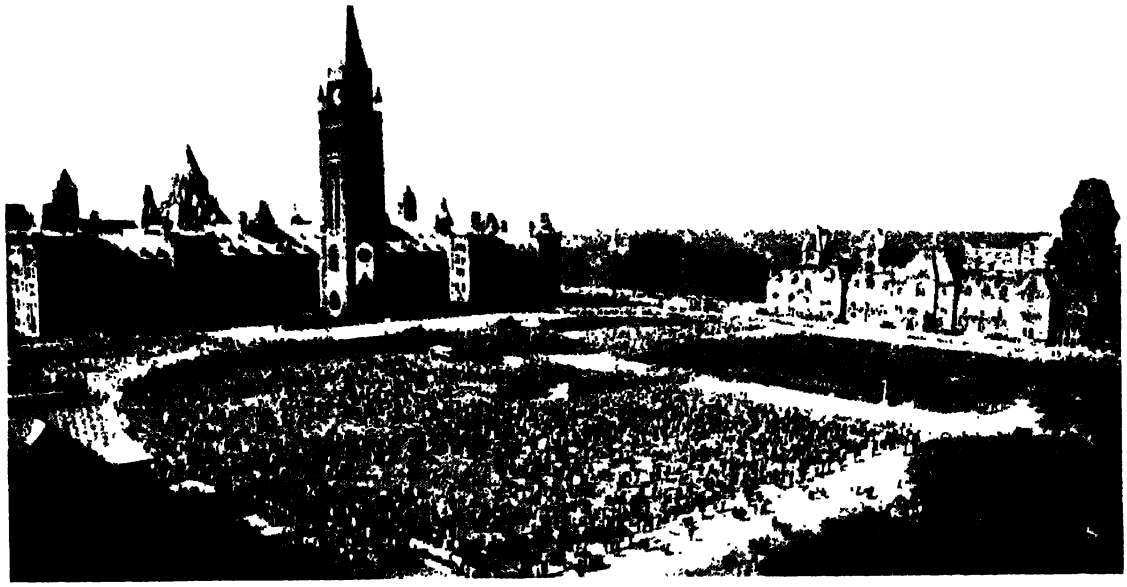
THE QUEEN'S PROCESSION



Bippa

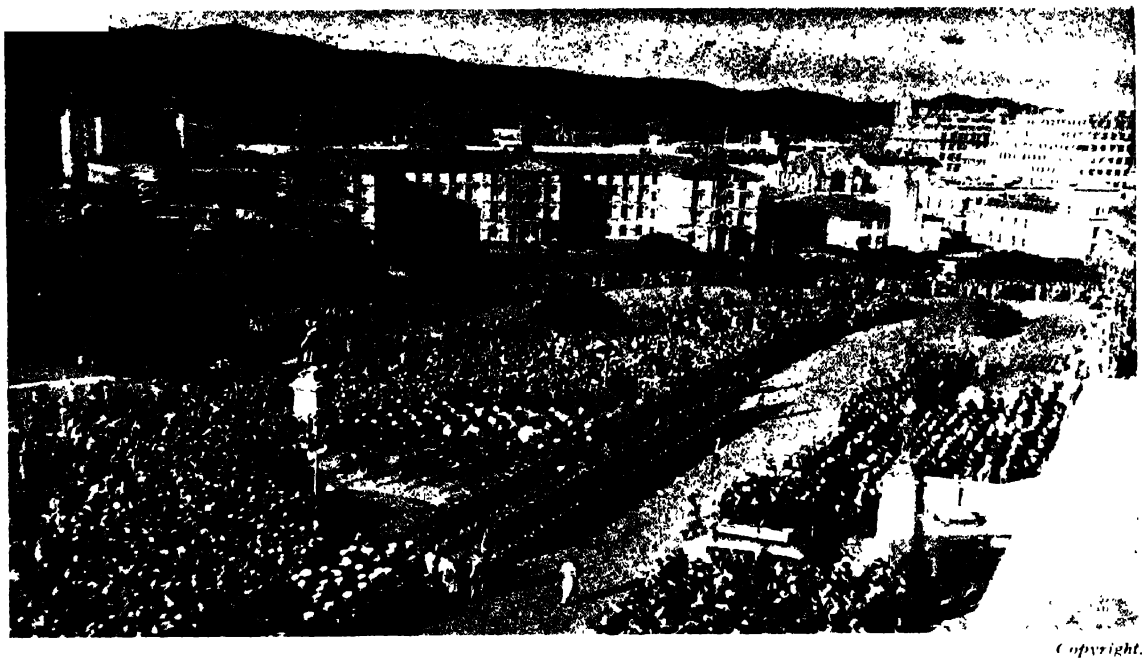
The ceremony of the Coronation is over and Queen Elizabeth II, wearing the Imperial State Crown and carrying the Orb and Sceptre, walks in procession down the Nave of Westminster Abbey. Her Majesty is followed by her six Maids of Honour who bear her train, and is supported by two Bishops, while the procession is flanked by members of the Corps of Gentlemen-at-Arms as they move to the West Door of the Abbey.

IN CANADA AND NEW ZEALAND



Capital Press Service

In the Canadian capital, Ottawa, many thousands of people gathered on the lawns of Parliament Hill and lined the streets to pay homage to the new Queen. Seven thousand troops took part in this national ceremony and later marched past the Governor-General, the Rt Hon Vincent Massey, on the reviewing stand.



Copyright.

Similar scenes were witnessed in Wellington, the capital of New Zealand. An official State celebration took place at Parliament House, and in this photograph the Governor-General, Sir William Norrie is inspecting the guard of honour. Here, as in every country of the Commonwealth, Coronation Day was a national holiday.

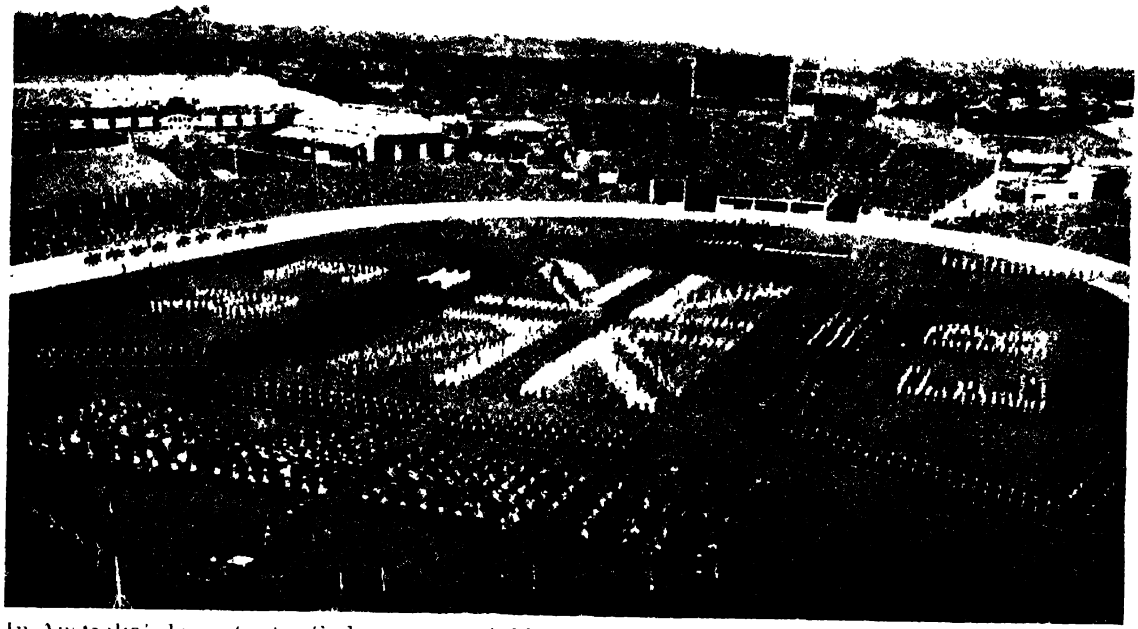


H.M. THE QUEEN AND H.R.H. THE DUKE OF EDINBURGH

Her Majesty Queen [illegible] Throne Room at [illegible] Imperial State C[illegible]



AUSTRALIA'S CORONATION TABLEAU



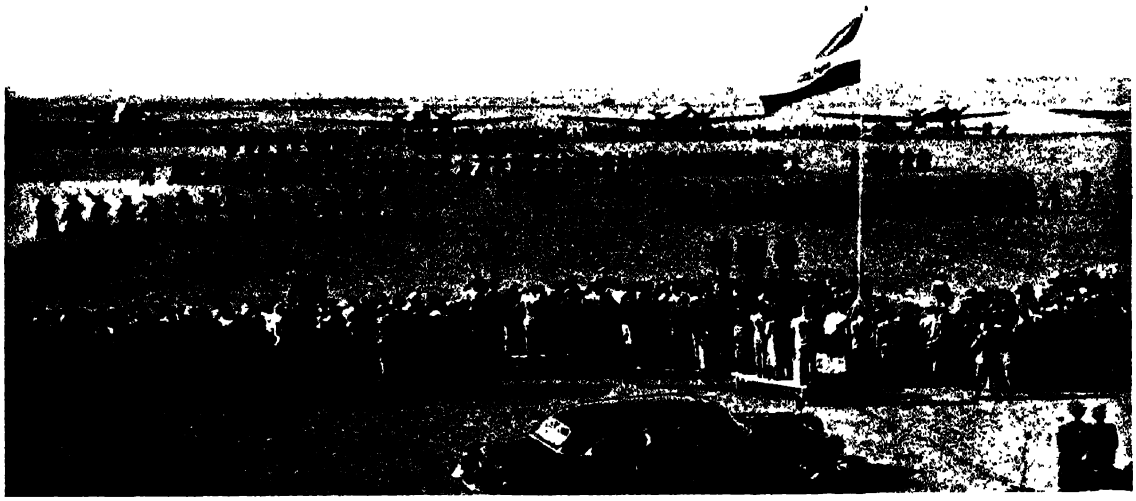
In Australia's largest city, Sydney, 7,500 children formed a 20,000-square-foot human Union Jack, with the Royal Crown and cipher. The flag itself was formed by 2,500 school-children, while 300 white-clad young girls, whose fathers were killed in the Second World War, outlined the Royal cipher



Australian Official photos.

It took only seven minutes to form the Coronation Day Tableau on Sydney Showground, seen in the upper photograph. Many thousands of representatives from the civilian and permanent Defence Forces also took part in the celebrations. In the evening a great fireworks display was given in Sydney's famous harbour, as seen in the lower photograph.

CELEBRATIONS IN SOUTH AFRICA



Copyright

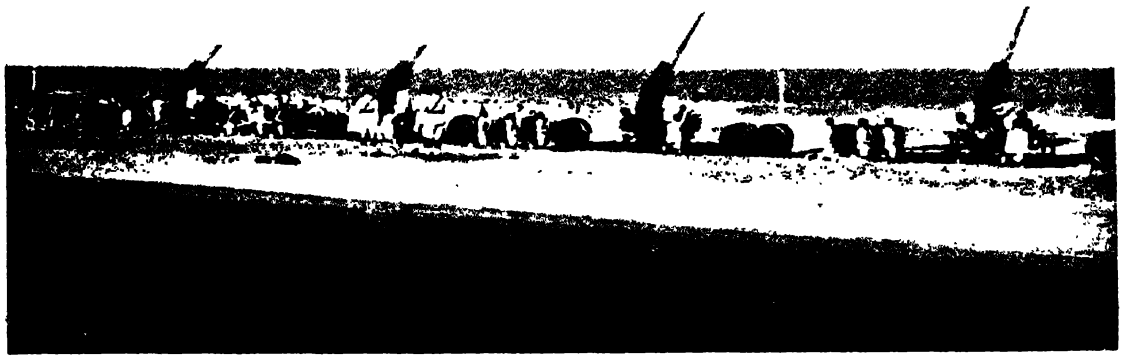
Throughout the Union of South Africa Coronation celebrations were held in various centres. The Governor-General, Dr. the Hon. Ernest George Jansen, took the Salute at a ceremonial parade on Coronation Day at the Zwartkop Air Station, and part of this parade is seen in the photograph above.



Cape Argus.

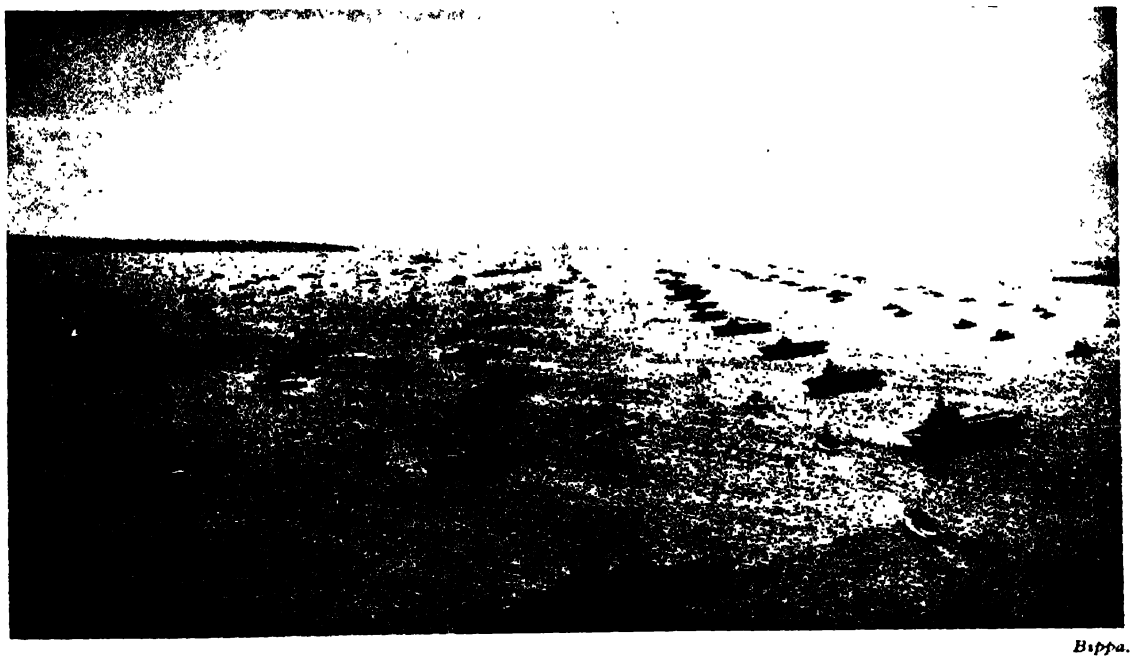
Capetown is the largest seaport and the legislative capital of the Union of South Africa. The Coronation Day celebrations included the decoration of the Houses of Parliament. These were illuminated at night and made an impressive sight as seen in this photograph taken after dark.

FROM CEYLON TO SPITHEAD



Associated Newspapers of Ceylon

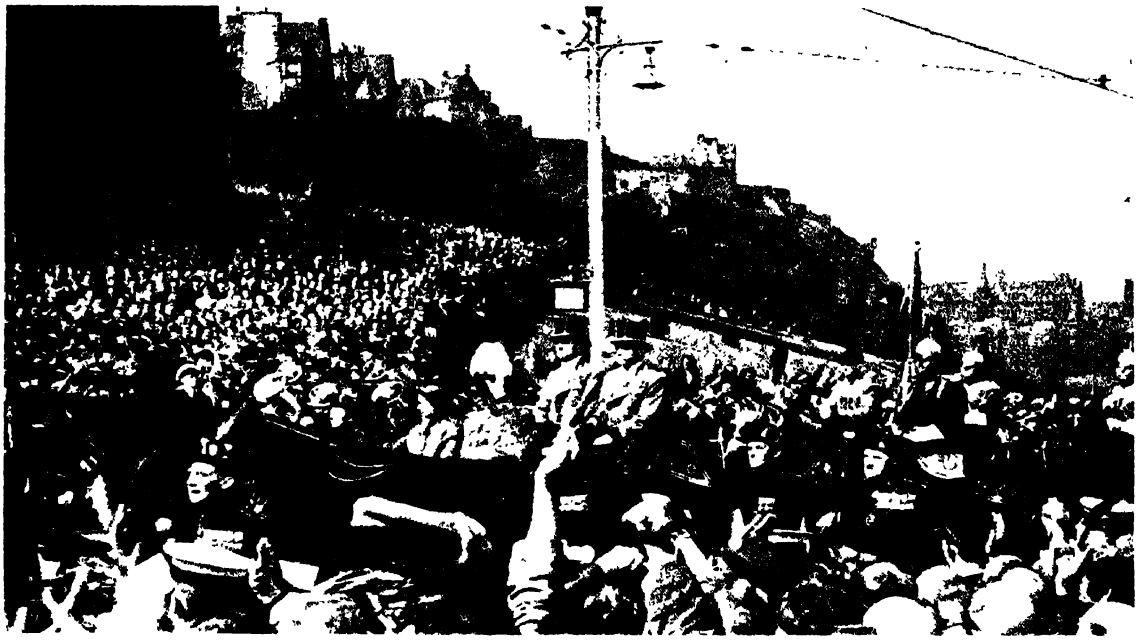
Ceylon is one of the youngest of the self-governing Dominions of the British Commonwealth of Nations. On Coronation Day a huge crowd assembled to watch the Parade on the Naval grounds at Colombo when, among other celebrations, a 21-gun Salute was fired by the Anti-Aircraft Regiment of the Ceylon Artillery in honour of the Queen.



Bippa.

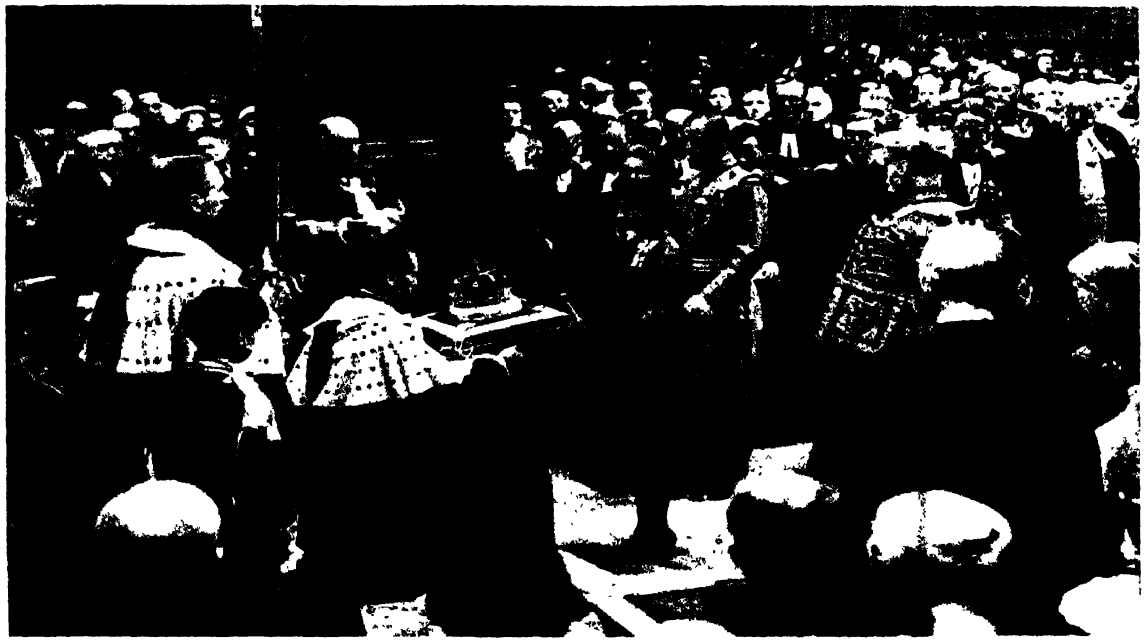
On June 15th, the Queen, accompanied by the Duke of Edinburgh, on board H.M.S. *Surprise*, reviewed a great assembly of warships at Spithead. The warships of the Royal Navy, the Dominions, and of many foreign navies were gathered for this great occasion when the Queen sailed along the lines. At night the Fleet was illuminated and a fireworks display was given.

EDINBURGH'S SERVICE OF THANKSGIVING



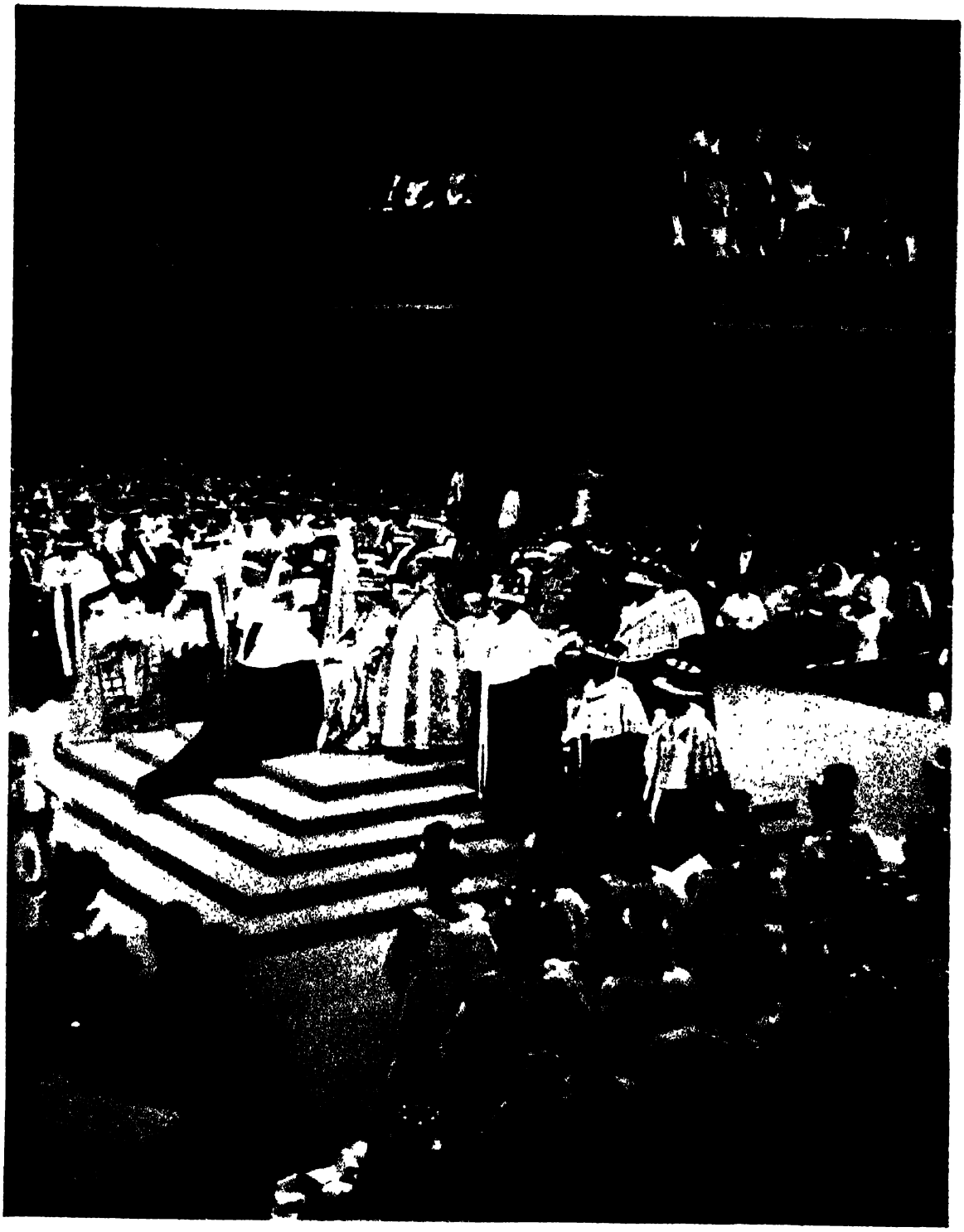
Central Press

On June 24th the Queen and the Duke of Edinburgh paid a State visit to Scotland, and Edinburgh welcomed them with Scottish loyalty, pride and enthusiasm. Above is the scene as they drove through the cheering crowds gathered at The Mound on their way to St. Giles' Cathedral.



Sport and General

At the National Service of Thanksgiving and Dedication in St. Giles' Cathedral, Edinburgh, the Queen handed the Crown of Scotland to the Duke of Hamilton "for safe keeping." Behind the kneeling Duke who holds the Crown before the Queen is seen the Earl of Home, holding the Sword of State, one of the Honours of Scotland.



THE EARL MARSHAL KNEELS IN HOMAGE

Beyond him are the Duke of [illegible] and the Duke of Norfolk, Earl Marshal and Hereditary Mar



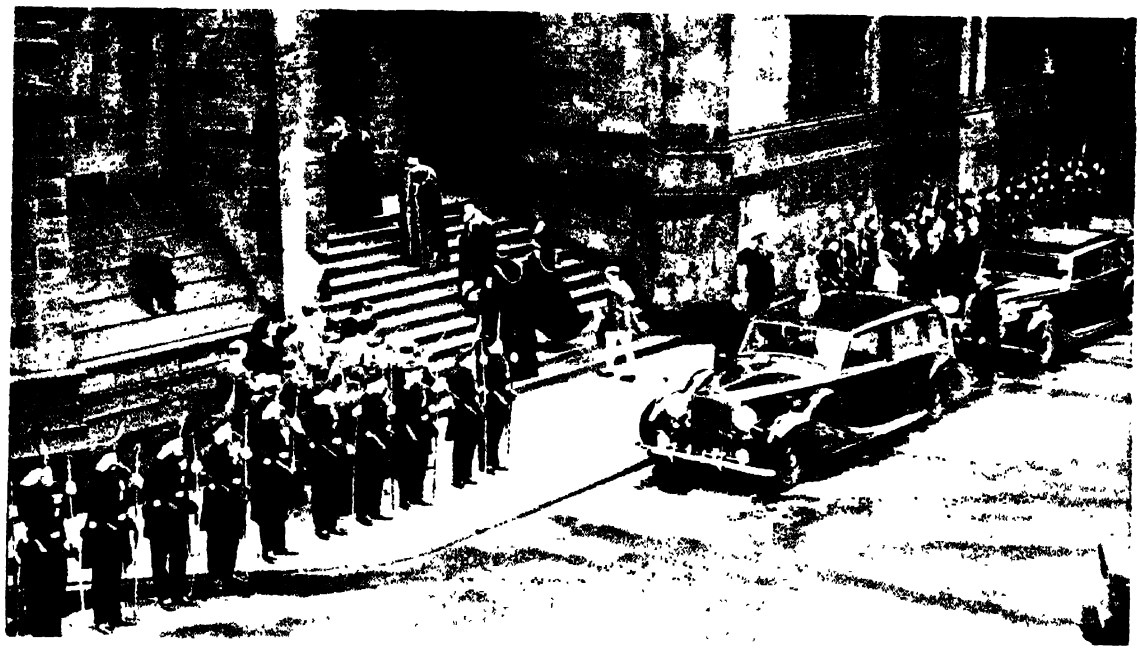
IN A GOLDEN COACH THE QUEEN RIDES HOME

THE ROYAL TOUR OF SCOTLAND



Topical.

Later in their Scottish tour the Queen and the Duke of Edinburgh visited Glasgow and Paisley. Here the Queen is seen as she was welcomed to the home of Mr James Wilson, holder of the Military Medal. The house seen in this photograph was presented to the Scottish Veterans Association by the late Sir Harry Lauder



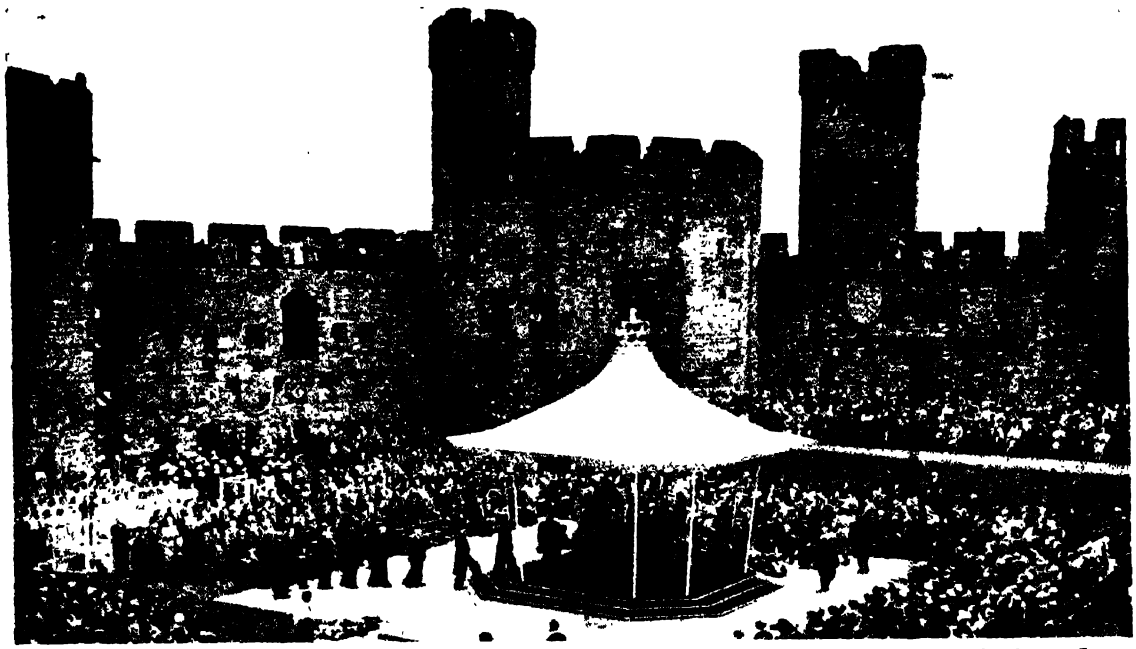
Keystone Picture Service.

At a ceremony in the Chapel of the Order of the Thistle in St Giles' Cathedral, the Queen installed the Duke of Edinburgh as a Knight of the Thistle before they attended morning service in the Cathedral. The Most Ancient and Most Noble Order of the Thistle was instituted in 1687.

THROUGH THE PRINCIPALITY OF WALES



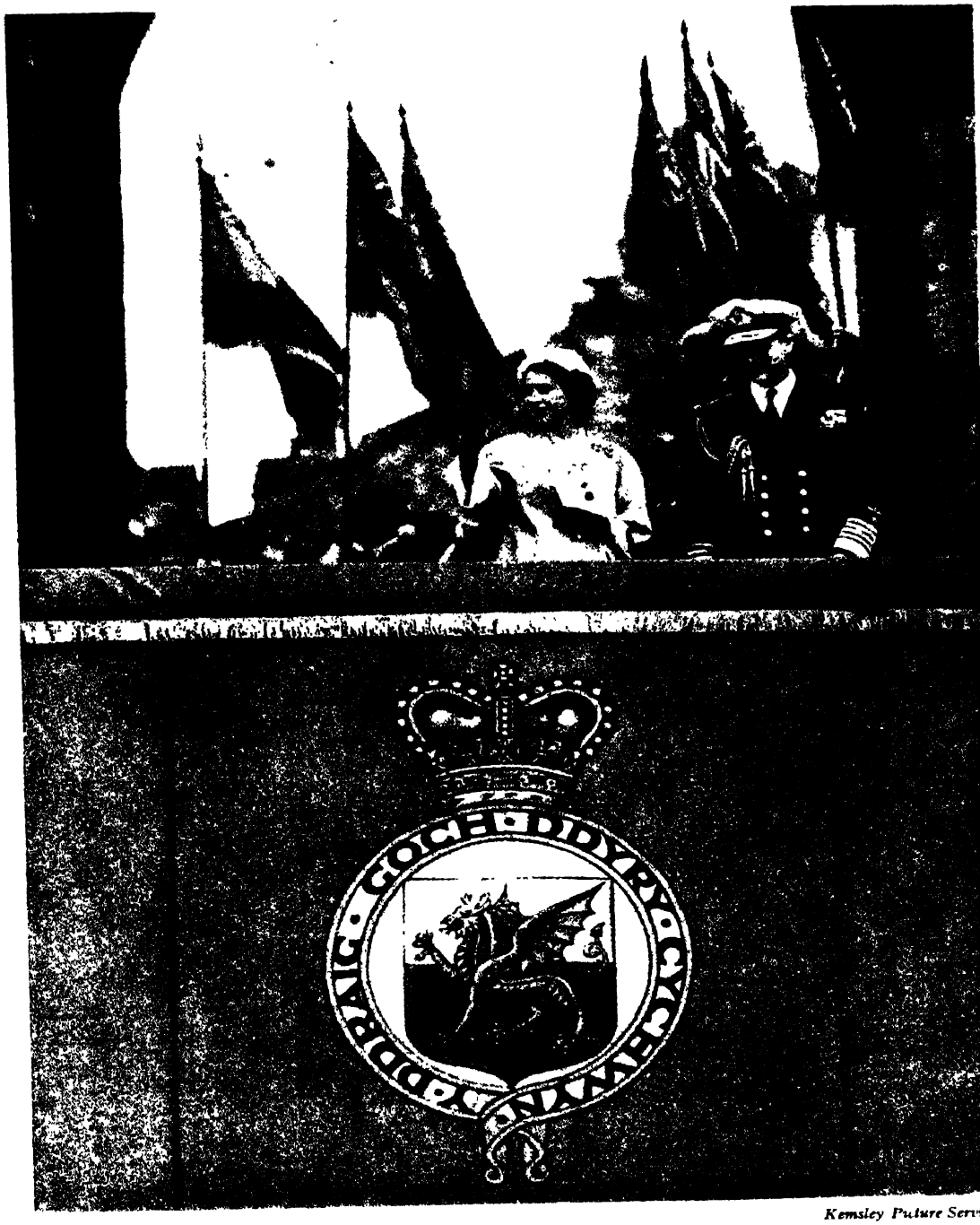
During the Royal Tour of Wales in July the Queen and the Duke of Edinburgh visited Cardiff. After the civic luncheon given in her honour, the Queen knighted the Lord Mayor of the city (Mr. J. P. Collins) with whom she is seen here in happy conversation as they sat outside the Cardiff City Hall to watch a fly-past of jet aircraft.



Photos: Kemsley Picture Service.

During the visit to Carnarvon Castle in North Wales the Queen and the Duke of Edinburgh received many representatives of the Church, Law, Arts, and of national and local government and industry. They are seen here inside the grounds of the Castle beneath an azure canopy topped with a gold-and-crimson crown.

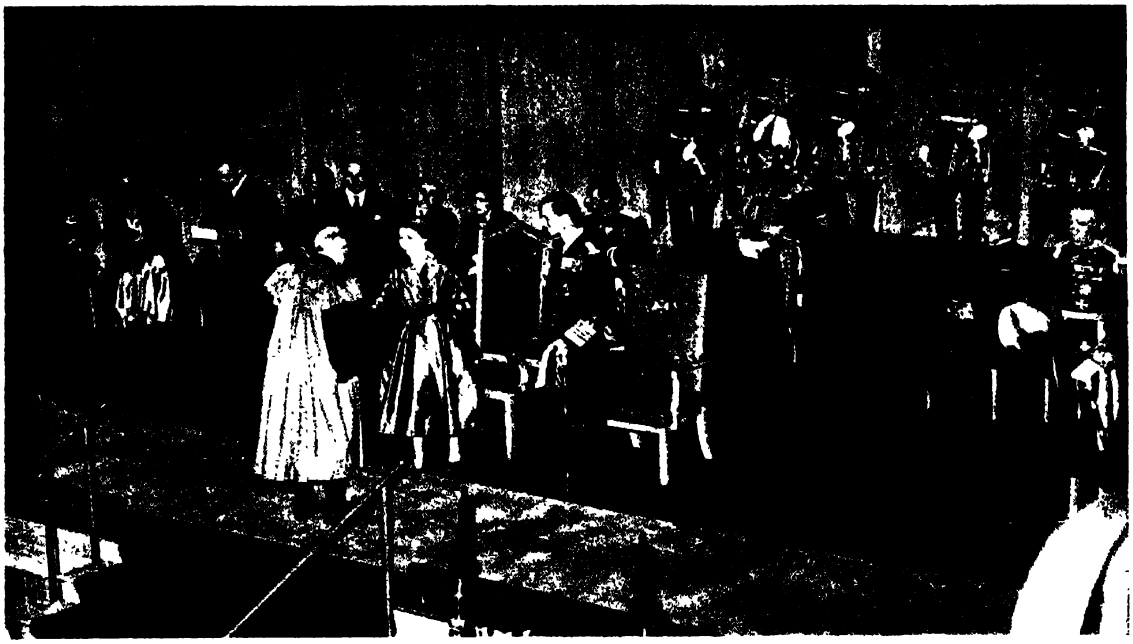
"THE ROYAL CAPITAL" OF WALES



Kemsley Picture Service.

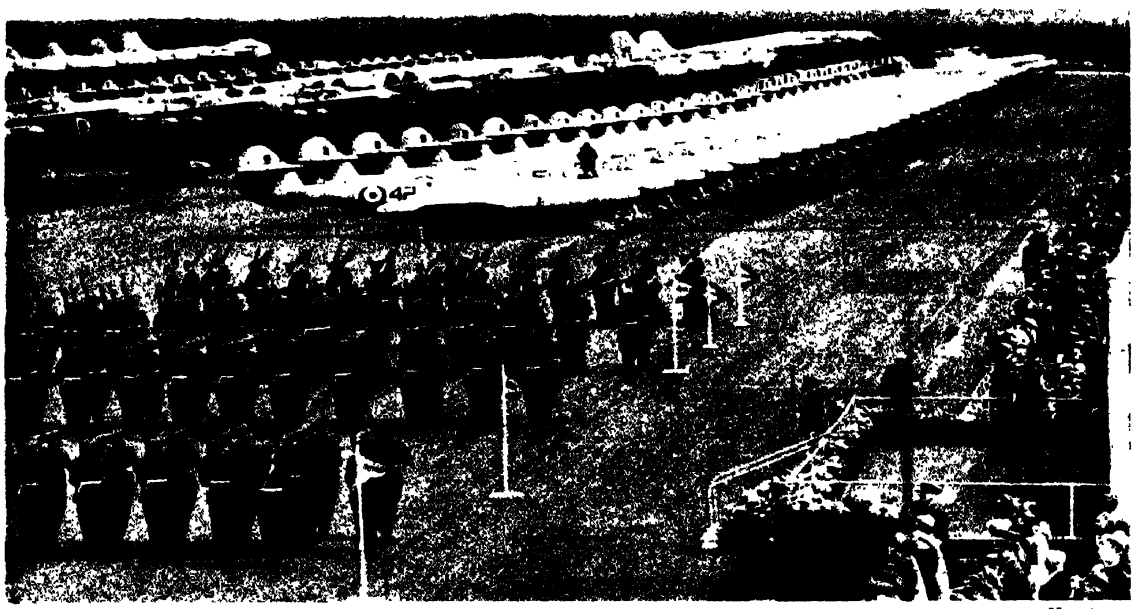
Before entering the historic Carnarvon Castle the Queen followed ancient custom by seeking admission from the Constable of the Castle, Lord Harlech. After the presentations, seen on the opposite page, the Queen with the Duke of Edinburgh appeared at Queen Eleanor's Gate and looked out upon the great crowd gathered to acclaim them in the town's main square.

IN NORTHERN IRELAND & SOUTH ENGLAND



Kemsley Picture Service

Northern Ireland was toured by the Queen and the Duke of Edinburgh early in July as part of the Coronation celebrations. Here Her Majesty is seen at the Belfast City Hall as she received the Most Rev. Dr. J. A. F. Gregg, Archbishop of Armagh and primate of All Ireland



Keystone.

On the dais on the right the Queen and the Duke of Edinburgh are seen during the march-past of aircrew at the Coronation Review of the Royal Air Force at Odiham, Hants. In the background are some of the aircraft which took part in the fly-past a little later. Altogether some 643 aircraft of thirty types, taking off from forty two different airfields, took part.

An Atlas of the World

and some Geographical Facts and Figures

	PAGE
THE WORLD	1
EUROPE	2
GREAT BRITAIN AND IRELAND	3
CENTRAL EUROPE	4
ASIA	5
INDIA, PAKISTAN, CEYLON AND BURMA	6
CHINA	7
JAPAN, KOREA AND N.E. CHINA	8
AFRICA	9
SOUTH AFRICA	10
NORTH AMERICA	11
CANADA	12
UNITED STATES	13
SOUTH AMERICA	14
AUSTRALIA	15
NEW ZEALAND	16

GEOGRAPHICAL FACTS AND FIGURES

THE total area of the Earth is estimated at 196,836,000 square miles of which roughly 56 million square miles are land areas and 141 millions square miles of water.

Its diameter at the Equator is 7,926½ miles and its circumference round the Equator is 24,902 English miles.

This circumference is divided into 360 degrees of longitude, each of which measures at the Equator 69·17 English miles (60 geographical miles). North and South of the Equator the distances are marked by Parallels of Latitude, from 0° at the Equator to 90° at each of the Poles.

On an average the Earth is 93 million miles distance from the Sun and 239,000 miles from its satellite the Moon.

The Continents of the World are Europe, Asia, Africa, America and Australasia. America is often divided into the two continents of North and South America, while the vast area of island-studded ocean to the west and south of Australia and New Zealand is designated Oceania. In estimating the land surfaces of the Earth the term Oceania is taken to include Australasia, the Malay Archipelago, Polynesia and many islands of the Pacific Ocean from Australia to the most easterly islands of Polynesia.

The approximate areas and populations of these Continents are:

	Square Miles	People
EUROPE	3,750,000	475,000,000
ASIA	17,000,000	1,373,000,000
AFRICA	11,699,000	197,000,000
NORTH AMERICA	8,500,000	200,000,000
SOUTH AMERICA (inc. islands)	7,200,000	120,000,000
AUSTRALASIA AND PACIFIC ISLANDS (Oceania)	3,201,000	12,400,000
POLAR REGIONS	4,650,000	—
	56,000,000	2,377,400,000

OCEAN DEPTHS

The chief oceans of the world are the Pacific, Atlantic, Indian, Arctic and Antarctic. The greatest ocean depth is in the Pacific Ocean where a depth of 35,640 feet was recorded by soundings by a Royal Navy survey ship, 200 miles south-west of Guam, July 1951.

In the Atlantic Ocean the greatest depth is in the Porto Rico Trench: 30,143 feet. The greatest depth in the Indian Ocean is 22,968 feet. Depths of 13,000 to 17,850 feet have been recorded in the Antarctic and Arctic Oceans.

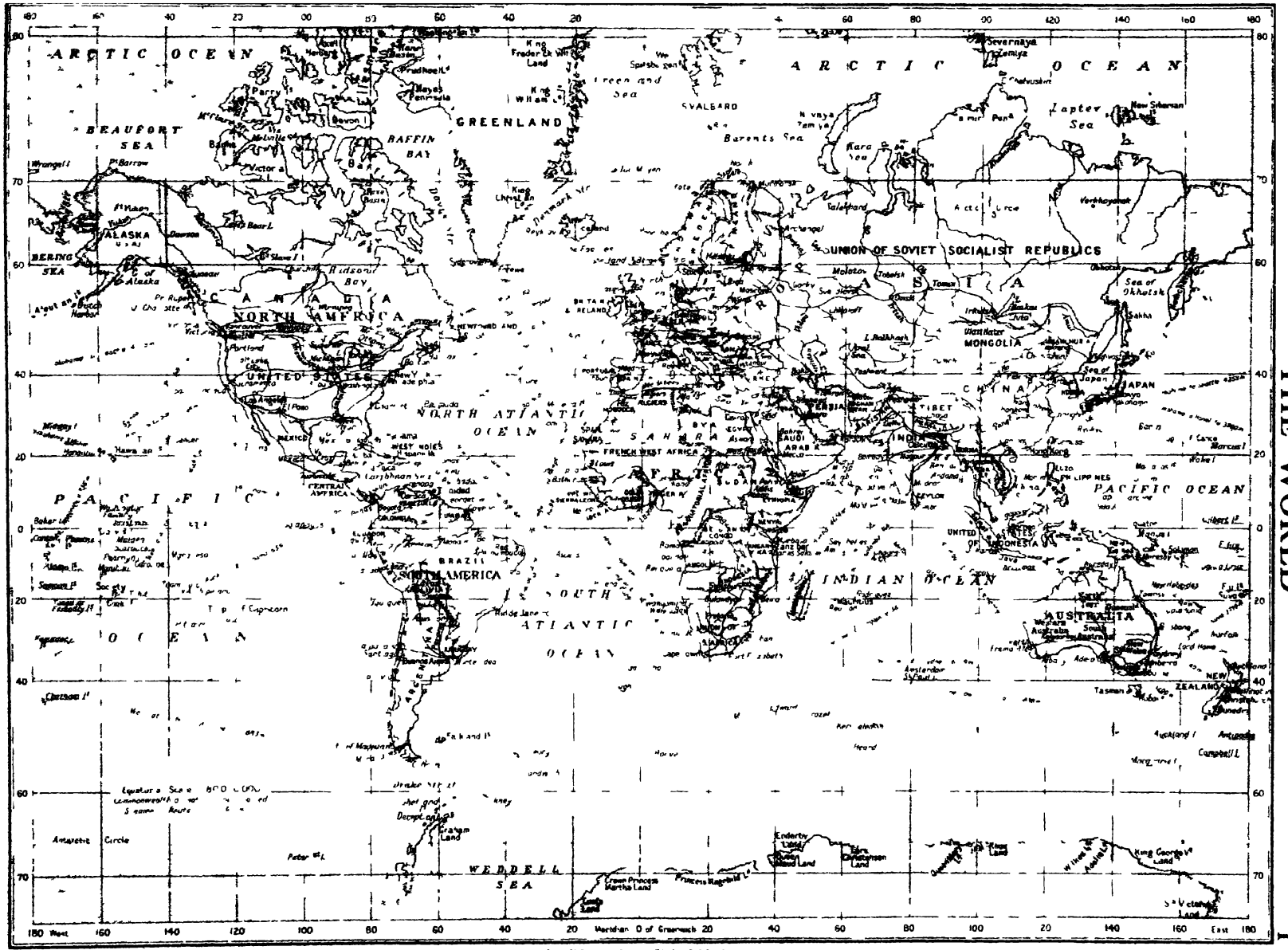
The Mediterranean Sea has a depth of 14,435 feet off the Cape of Matapan in Greece. In the comparatively shallow North Sea the greatest depth is 1,998 feet in the Skagerrak. The Baltic does not exceed 1,300 feet in depth.

LARGEST ISLANDS

Name	Ocean	Area (Sq. Miles)
GREENLAND (Danish)	Arctic	827,300
NEW GUINEA (Brit. and Netherlands)	Pacific	312,329
BORNEO (Brit. and Netherlands)	Pacific	290,000
BAFFIN LAND (British)	Arctic	231,000
MADAGASCAR (French)	Indian	228,000
SUMATRA (Netherlands)	Indian	163,000
GREAT BRITAIN	Atlantic	88,745
HONSHU (Japan)	Pacific	87,500
CELEBES (Netherlands)	Indian	73,000
PRINCE ALBERT (British)	Arctic	60,000
SOUTH ISLAND, New Zealand	Pacific	58,500
JAVA (Netherlands)	Indian	48,400
NORTH ISLAND, New Zealand	Pacific	44,500
CUBA (Independent)	Atlantic	44,000
NEWFOUNDLAND (Canada)	Atlantic	42,750
LUZON (Philippines)	Pacific	41,000
ELLESMERE (Canada)	Arctic	41,000
ICELAND (Independent)	Atlantic	39,709
MINDANAO (Philippines)	Pacific	37,000
IRELAND	Atlantic	32,531
HOKKAIDO (Japan)	Pacific	30,000

Other large islands of the British Commonwealth are *Tasmania*, 26,215 sq. miles; *Ceylon*, 25,400 sq. miles, and *Vancouver*, 12,400 sq. miles. *Australia* (2,974,581 sq. miles) is regarded as a continent.

Continued on pages following the Atlas.



W. & A.K. Johnston Limited Edinburgh & London

EUROPE

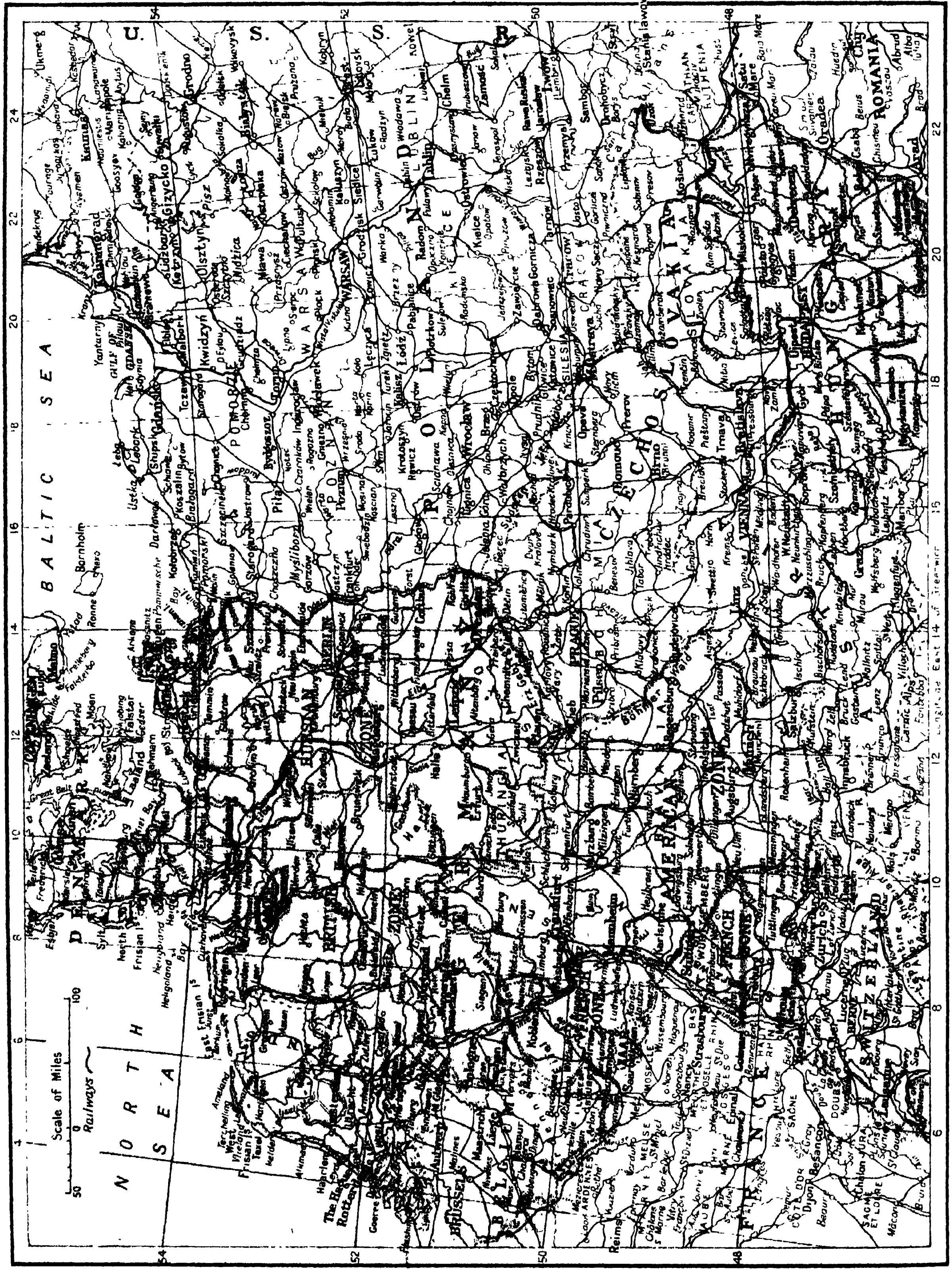

Scale of Miles
Railways
Meridian 0 of Greenwich
ATLANTIC OCEAN
NORTH SEA
BALTIC SEA
BLACK SEA
CASPIAN SEA
MEDITERRANEAN SEA
GREAT BRITAIN
IRELAND
REPUBLIC OF IRELAND
NETHERLANDS
BELGIUM
GERMANY
POLAND
CZECHOSLOVAKIA
SLOVAKIA
AUSTRIA
HUNGARY
SWITZERLAND
FRANCE
SPAIN
PORTUGAL
ITALY
YUGOSLAVIA
ALBANIA
GREECE
ROMANIA
BULGARIA
TURKEY
SYRIA
IRAQ
CYPRUS
CRETE
SICILY
SARDINIA
CORSICA
DENMARK
SWEDEN
NORWAY
FINLAND
ESTONIA
LATVIA
LITHUANIA
UNION OF SOVIET SOCIALIST REPUBLICS
MOROCCO
ALGERIA
TUNISIA
LIBYA

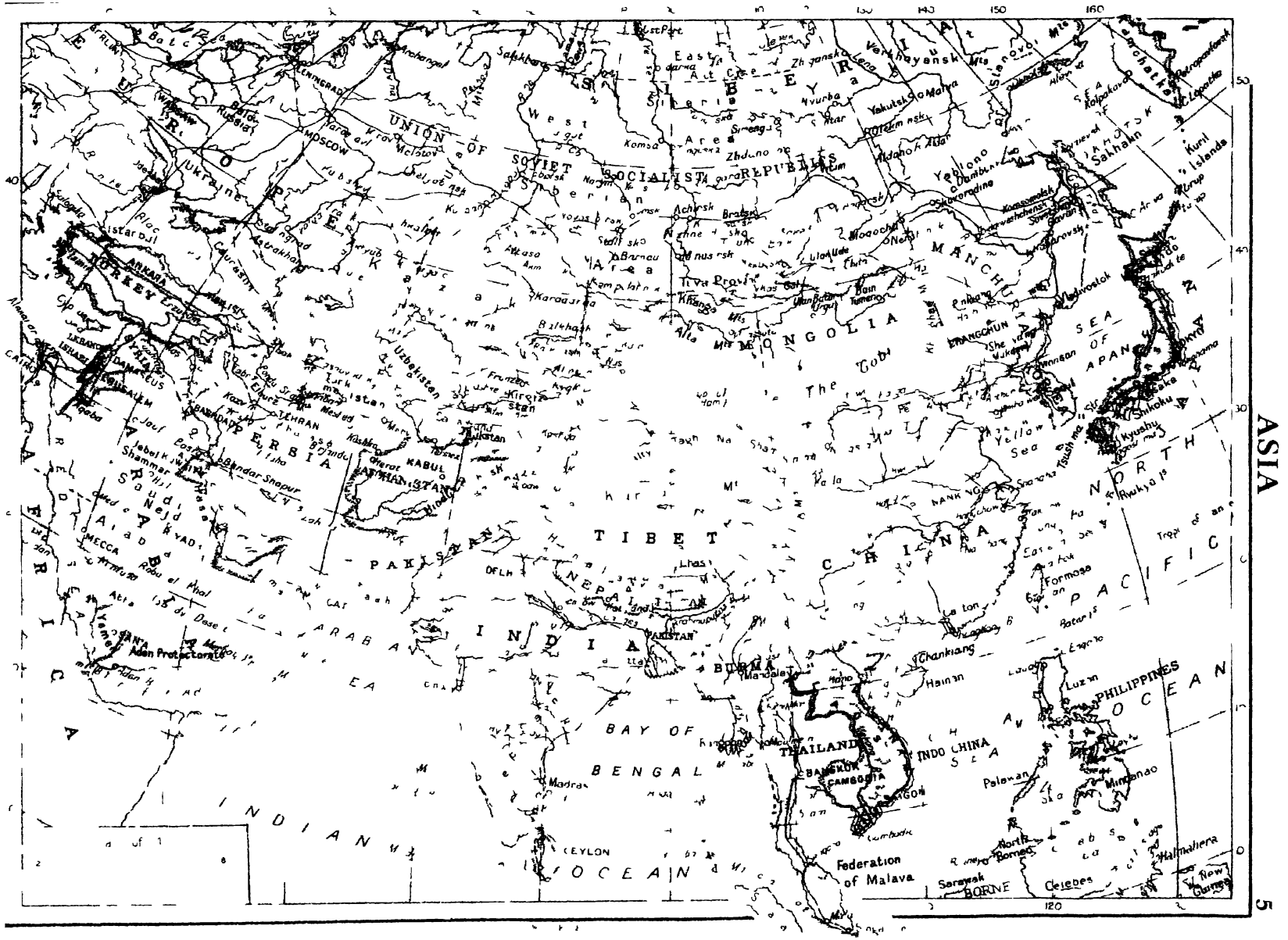
GREAT BRITAIN & IRELAND

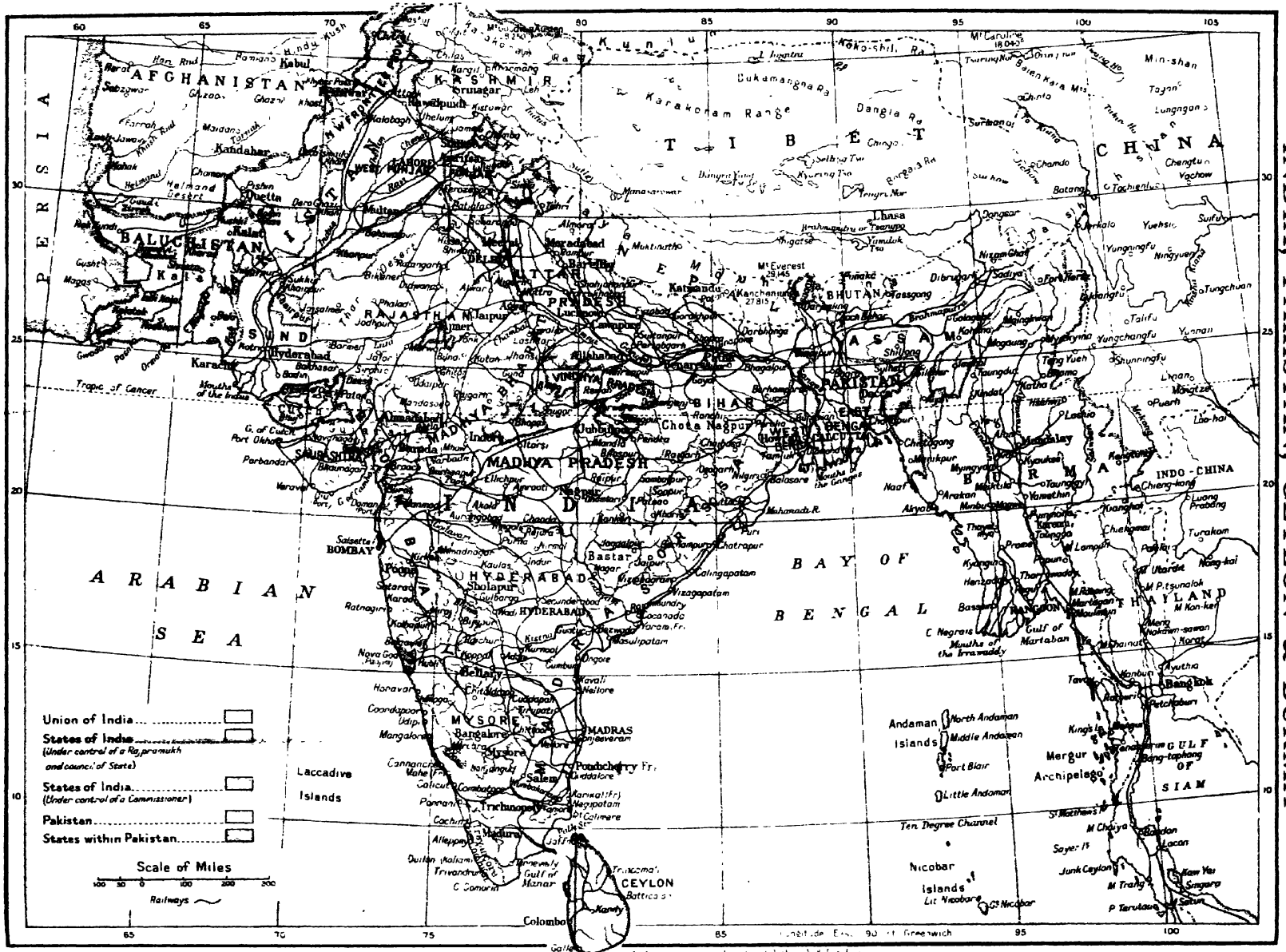


W. & A. K. Johnston & Bacon Limited Edinburgh & London

CENTRAL EUROPE



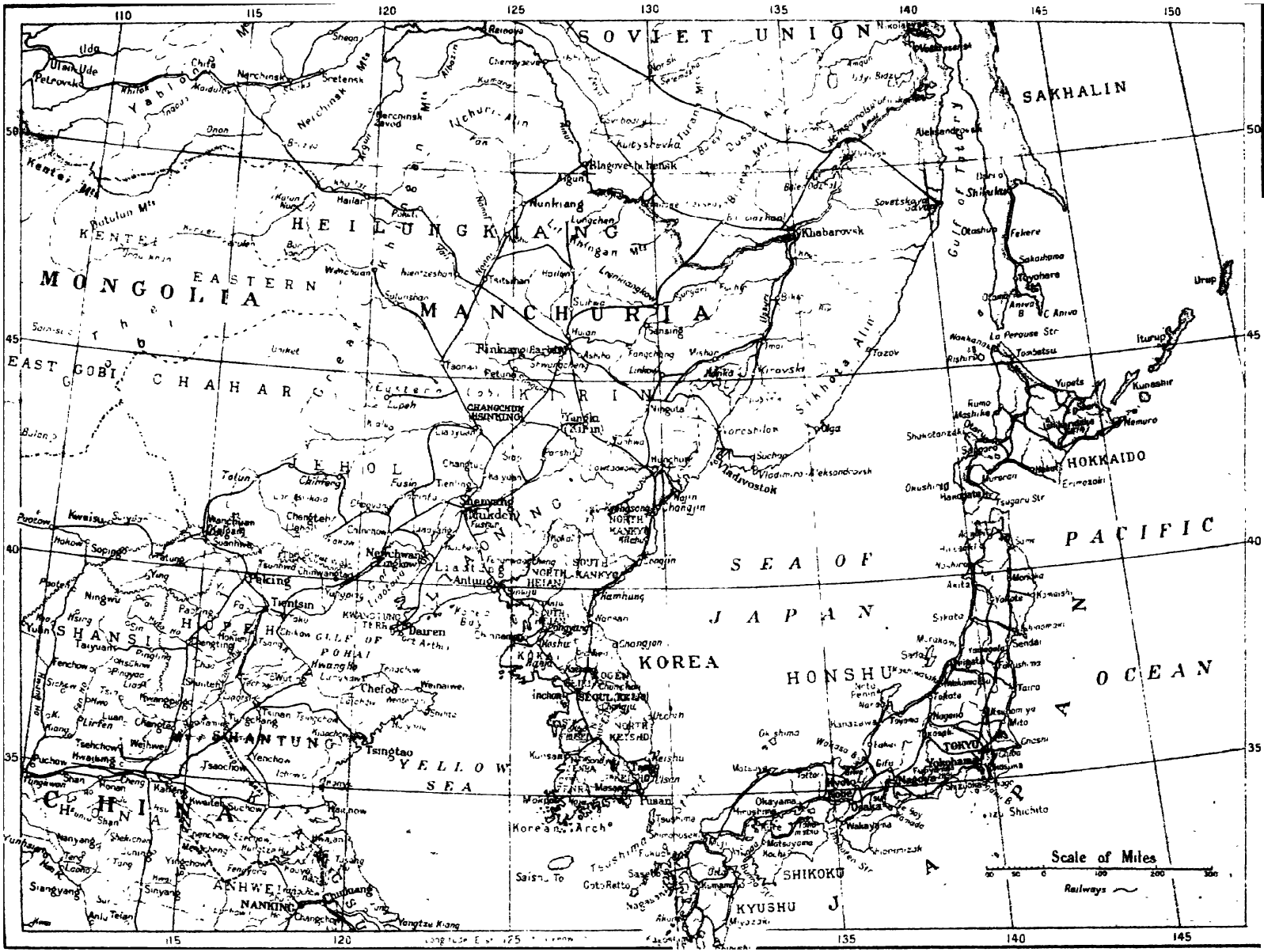

ASIA
UNION OF SOVIET SOCIALIST REPUBLICS
MOSCOW
LENINGRAD
Siberia
MONGOLIA
The Gobi
MANCHU
TIBET
CHINA
PAKISTAN
INDIA
NEPAL
BURMA
THAILAND
INDO CHINA
Formosa
PHILIPPINES
OCEAN
PACIFIC
NORTH
SEA OF JAPAN
Yellow Sea
BAY OF BENGAL
INDIAN OCEAN
ARABIA
TURKEY
IRAN
AFGHANISTAN
KABUL
TEHRAN
DAMASCUS
JERUSALEM
MECCA
Aden Protectorate
Federation of Malaya
CEYLON
BORNEO
Celebes
Sakhalin
Kuril Islands
Hainan
Shikoku
Kyushu
Honshu
Hokkaido
Luzon
Mindanao
Palawan
Sarawak
North Borneo
Halmahera
New Guinea
Madras
Lhasa
Chankiang
Kamchatka
Verkhoyansk
Yakutsk
Irkutsk
Novosibirsk
Omsk
Tashkent
Baku
Istanbul
Ankara
Baghdad
Basra
Mecca
Medina
Riyadh
Jeddah
Aden
Karachi
Peshawar
Kabul
Bombay
Calcutta
Rangoon
Bangkok
Saigon
Vladivostok
Khabarovsk
Irkutsk
Yakutsk
Verkhoyansk
Yenisei
Lena
Ob
Amur
Indus
Ganges
Euphrates
Tigris
Jordan
Nile
Red Sea
Persian Gulf
Caspian Sea
Aral Sea
Lake Baikal
Lake Balkhash
Lake Issyk Kul
Lake Van
Lake Urmia
Dead Sea
Sea of Galilee
Mediterranean Sea
Black Sea
Sea of Azov
Gulf of Oman
Gulf of Aden
Gulf of Suez
Gulf of Aqaba
Gulf of Tonkin
Gulf of Siam
Sea of Okhotsk
Bering Sea
Sea of Japan
Yellow Sea
East China Sea
South China Sea
Java Sea
Timor Sea
Arafura Sea
Coral Sea
Tasman Sea
Great Australian Bight
Great Sandy Desert
Great Victoria Desert
Simpson Desert
Gibson Desert
Nullarbor Plain
Western Australia
Northern Territory
Queensland
New South Wales
Victoria
South Australia
Tropic of Cancer
Tropic of Capricorn
Equator
50
40
30
20
10
0
120
130
140
150
160


INDIA, PAKISTAN, CEYLON & BURMA
AFGHANISTAN
PERSIA
BALUCHISTAN
KASHMIR
TIBET
CHINA
BHUTAN
NEPAL
ARABIAN SEA
BAY OF BENGAL
INDO-CHINA
THAILAND
CEYLON
Colombo
BOMBAY
MADRAS
HYDERABAD
MADHYA PRADESH
RAJASTHAN
Laccadive Islands
Andaman Islands
Nicobar Islands
Mergui Archipelago
Ten Degree Channel
Union of India
States of India (Under control of a Rajpramukh and council of State)
States of India (Under control of a Commissioner)
Pakistan
States within Pakistan
Scale of Miles
Railways

CHINA

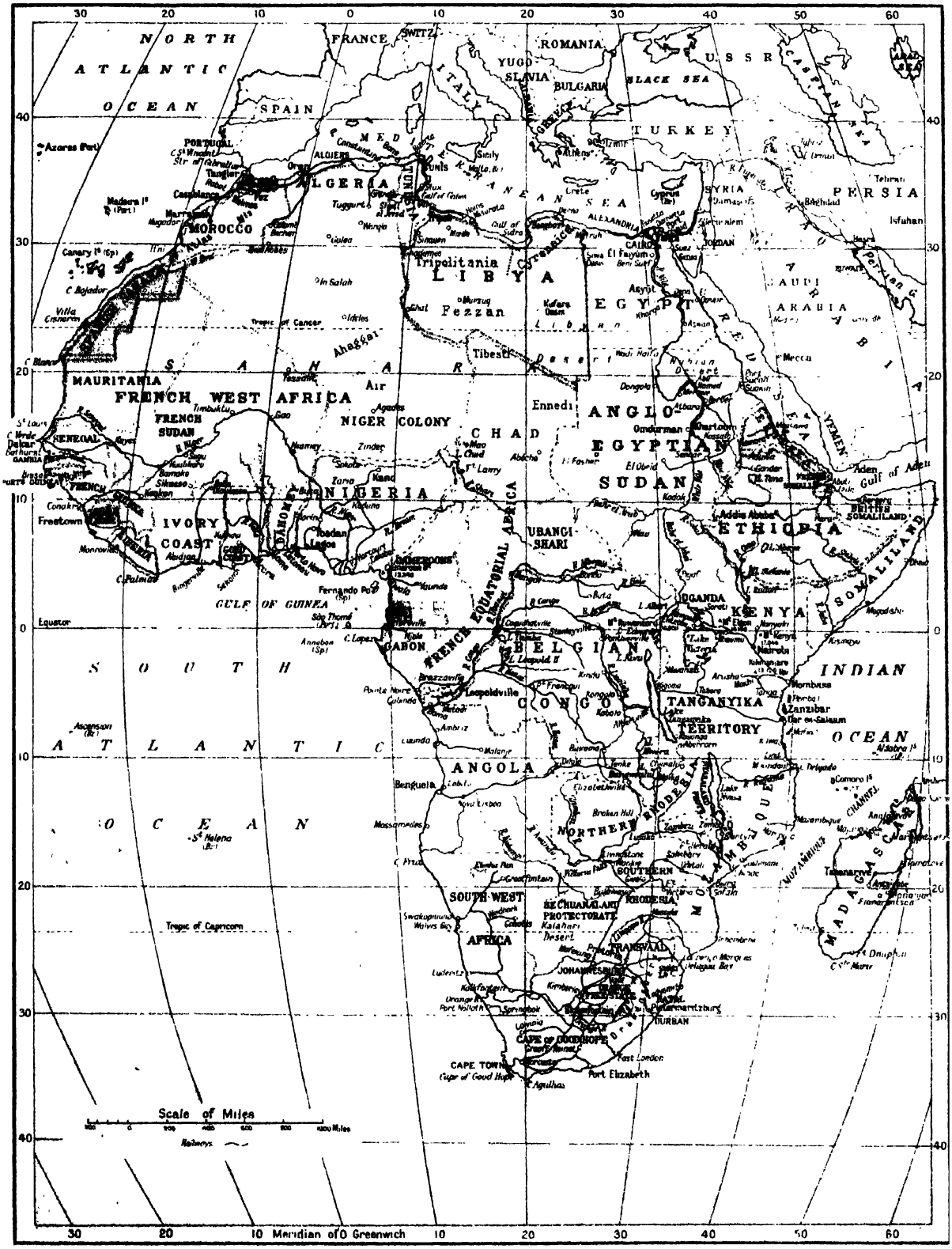


W. & A. K. Johnston Limited Edinburgh & London



JAPAN, KOREA & N. E. CHINA

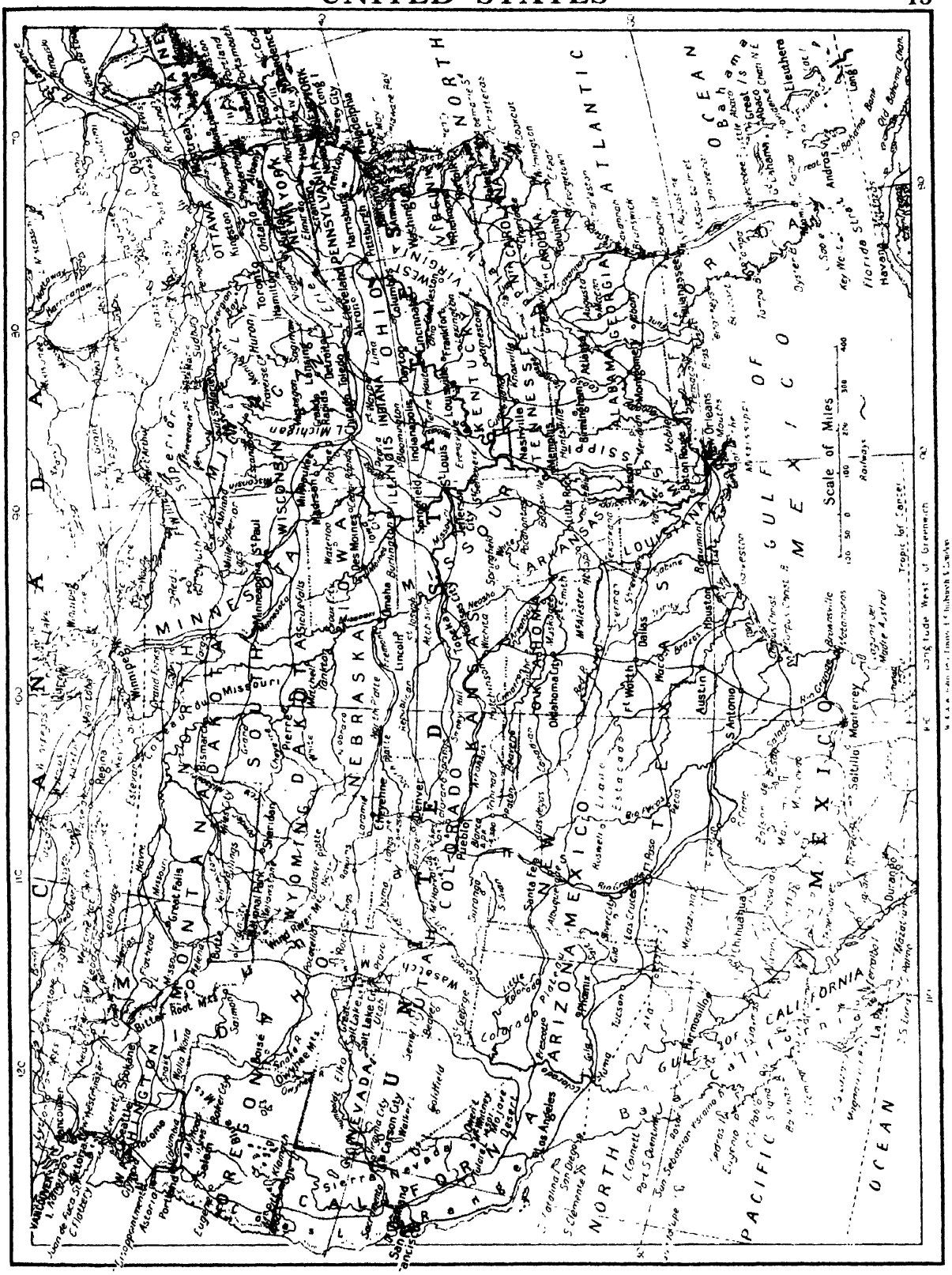
AFRICA



W. & A. K. Johnston Limited Edinburgh & London

CANADA

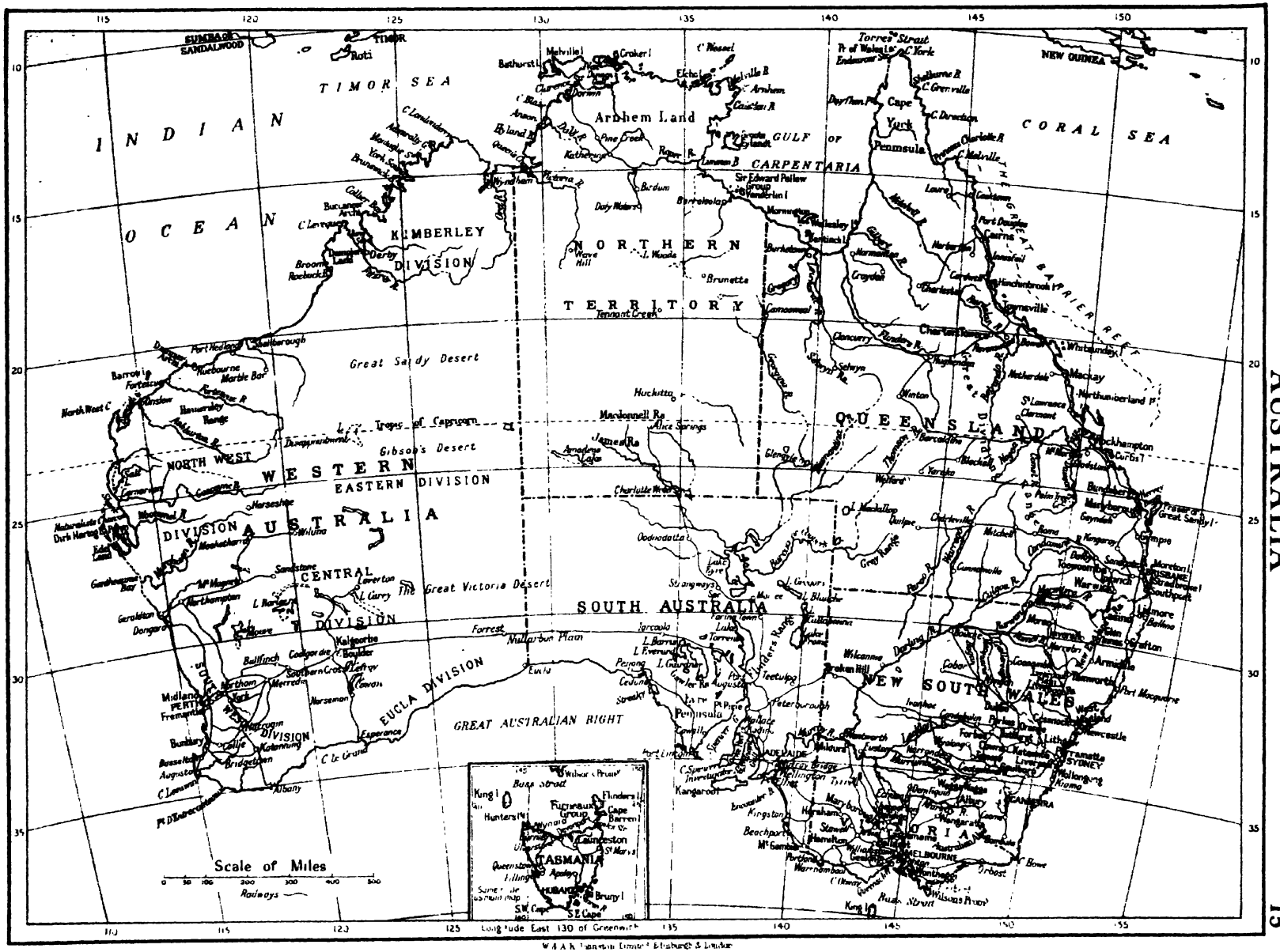

GREENLAND
DAVIS STRAIT
BAFFIN BAY
BEAUFORT SEA
ALASKA
Brooks Range
YUKON
NORTHWEST TERRITORIES
Mackenzie R.
Great Slave Lake
Great Bear Lake
Banks Island
Victoria Island
Prince Albert Pen.
Prince of Wales Island
Somerset Island
Devon Island
Ellesmere Island
Baffin Island
Coburg Island
Queen Elizabeth Islands
HUDSON BAY
Southampton I.
Foxe Channel
Foxe Basin
Melville Pen.
Boothia Pen.
Akimiski I.
James Bay
Labrador
Ungava Bay
Hudson Strait
Belcher Islands
Nottaway R.
Abitibi L.
Lake Nipigon
Lake Winnipeg
MANITOBA
SASKATCHEWAN
ALBERTA
BRITISH COLUMBIA
Vancouver Island
Queen Charlotte Islands
Dixon Entrance
Hecate Str.
Great Slave L.
Athabasca L.
Lake Athabasca
Peace R.
Fort Nelson
Fort St. John
Dawson Creek
Prince George
Prince Rupert
Kamloops
Vancouver
Victoria
Nanaimo
Kelowna
Penticton
Trail
Nelson
Cranbrook
Kootenay L.
Columbia R.
Fraser R.
Thompson R.
Okanagan L.
Lake of the Woods
Kenora
Thunder Bay
Sault Ste. Marie
Lake Superior
Lake Huron
Georgian Bay
Manitoulin I.
Lake Michigan
Lake Erie
Lake Ontario
Niagara Falls
Toronto
Hamilton
London
Windsor
Ottawa
Kingston
Sudbury
North Bay
Timmins
Kapuskasing
Cochrane
Moosonee
Moose R.
Gulf of St. Lawrence
Anticosti I.
Magdalen Is.
Prince Edward I.
Nova Scotia
New Brunswick
Quebec
Montreal
Trois Rivières
Sherbrooke
Lake St. John
Saguenay R.
Gaspé Pen.
Chaleur Bay
Bay of Fundy
Cape Breton I.
Sydney
Halifax
Yarmouth
Saint John
Fredericton
Moncton
Newfoundland
St. John's
Labrador
Grand Falls
Corner Brook
Gander
Goose Bay
Churchill
Thompson
Flin Flon
The Pas
Brandon
Portage la Prairie
Regina
Moose Jaw
Swift Current
Medicine Hat
Lethbridge
Calgary
Edmonton
Red Deer
Grande Prairie
Peace River
Whitehorse
Dawson
Mackenzie Mts.
Rocky Mts.
Selkirk Mts.
Cariboo Mts.
Coast Mts.
Skeena R.
Fraser Plateau
Columbia Mts.
Interior Plateau
Great Plains
Canadian Shield
Hudson Plains
Appalachian Mts.
Laurentian Mts.
Gaspé Mts.
Long Range Mts.
Torngat Mts.
Mt. Logan
Mt. Robson
Mt. Waddington
Mt. Columbia
Mt. Assiniboine
Mt. Revelstoke
Mt. Temple
Mt. Victoria
Mt. Forbes
Mt. Fairweather
Mt. Elbert
Mt. Edith Cavell
Mt. Robson Prov. Park
Jasper Nat. Park
Banff Nat. Park
Glacier Nat. Park
Yoho Nat. Park
Kootenay Nat. Park
Waterton Lakes Nat. Park
Wood Buffalo Nat. Park
Prince Albert Nat. Park
Riding Mountain Nat. Park
Point Pelee Nat. Park
Fundy Nat. Park
Kejimkujik Nat. Park
Cape Breton Highlands Nat. Park
Gros Morne Nat. Park
Terra Nova Nat. Park
Pacific Rim Nat. Park
Gulf Islands Nat. Park
Pacific Ocean
Atlantic Ocean
Scale of Miles


CANADA
MINNESOTA
NORTH DAKOTA
SOUTH DAKOTA
MONTANA
WYOMING
NEBRASKA
COLORADO
KANSAS
OKLAHOMA
TEXAS
NEW MEXICO
ARIZONA
UTAH
NEVADA
IDAHO
WASHINGTON
OREGON
CALIFORNIA
WISCONSIN
MICHIGAN
ILLINOIS
INDIANA
OHIO
KENTUCKY
TENNESSEE
MISSISSIPPI
ARKANSAS
LOUISIANA
ALABAMA
GEORGIA
FLORIDA
SOUTH CAROLINA
NORTH CAROLINA
VIRGINIA
WEST VIRGINIA
PENNSYLVANIA
NEW YORK
MAINE
Lake Superior
Lake Michigan
Lake Huron
Lake Erie
Lake Ontario
ATLANTIC OCEAN
PACIFIC OCEAN
GULF OF MEXICO
Scale of Miles
Railways
Tropic of Cancer

SOUTH AMERICA

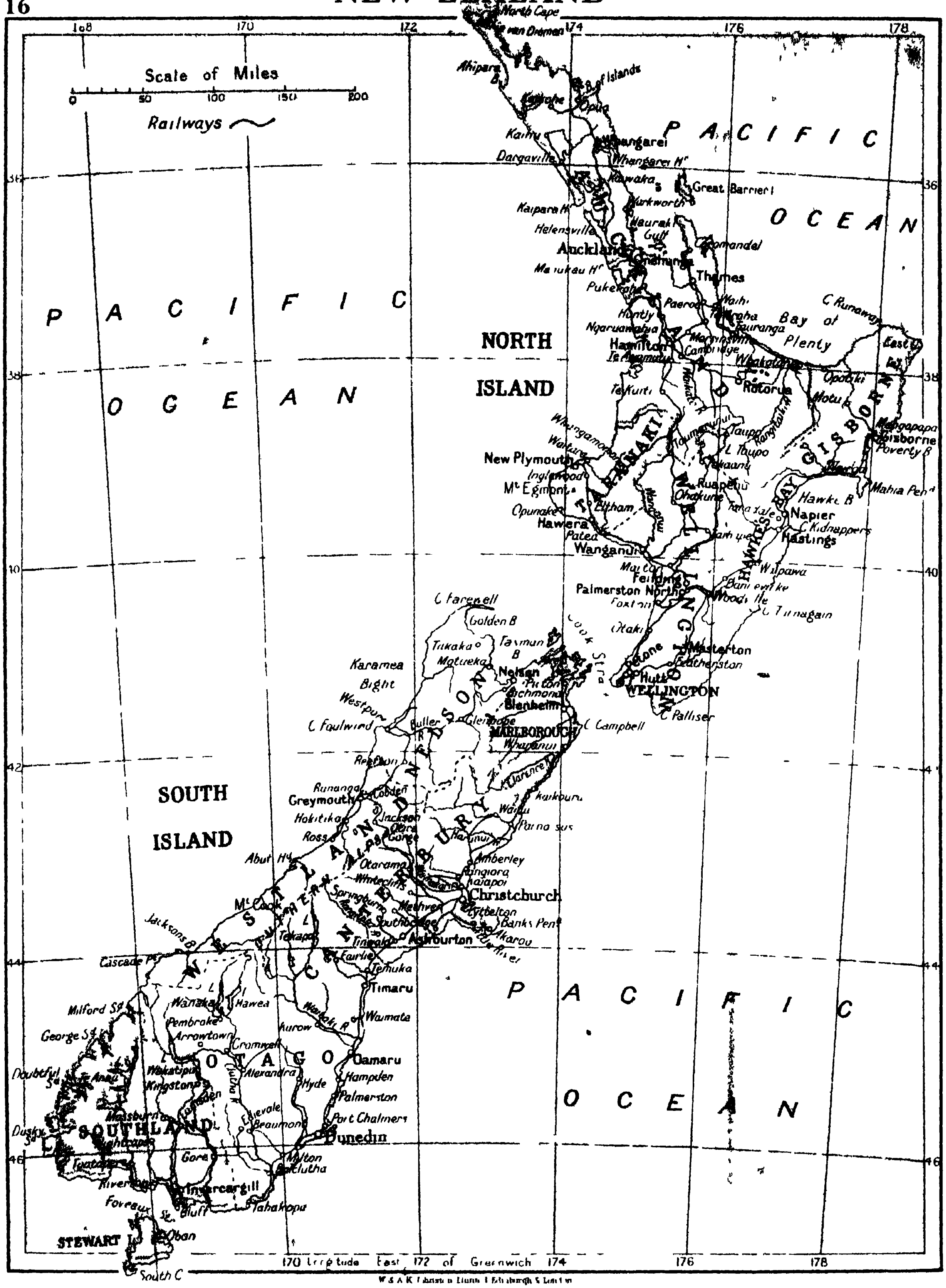


W. & A. K. Johnston Limited Edinburgh & London.



W. & A. K. Johnston Limited Edinburgh & London

NEW ZEALAND



Scale of Miles
0
50
100
150
200
Railways
PACIFIC OCEAN
NORTH ISLAND
SOUTH ISLAND
North Cape
Ahipara B.
B. of Islands
Kaihu
Whangarei
Whangarei Hr
Dargaville
Great Barrier I.
Kaipara Hr
Warkworth
Hauraki Gulf
Helensville
Coromandel
Auckland
Thames
Manukau Hr
Pukekohe
Paeroa
C. Runaway
Huntly
Bay of Plenty
Ngaruawahia
Tauranga
Hamilton
Cambridge
Te Awamutu
Whakatane
Opotiki
Te Kuiti
Rotorua
Motu
Gisborne
Poverty B.
L. Taupo
New Plymouth
Inglewood
Mt Egmont
Ruapehu
Ohakune
Mahia Pen.
Hawke B.
Opunake
Eltham
Napier
Hawera
Patea
C. Kidnappers
Hastings
Wanganui
Feilding
Waipawa
Palmerston North
Foxton
C. Turnagain
Otaki
Masterton
Featherston
WELLINGTON
C. Palliser
TARANAKI
HAWKE'S BAY
GISBORNE
WELLINGTON
C. Farewell
Golden B.
Tasman B.
Takaka
Motueka
Nelson
Picton
Richmond
Blenheim
Cook Str.
Karamea Bight
Westport
C. Foulwind
Buller R.
C. Campbell
MARLBOROUGH
NELSON
Reefton
Runanga
Greymouth
Hokitika
Ross
Kaikoura
Waiau
Parnassus
Abut Hd.
Amberley
Kaiapoi
Christchurch
Lyttelton
Banks Pen.
Akaroa
Mt Cook
Jacksons B.
Methven
Ashburton
Tekapo
Fairlie
Temuka
Timaru
Cascade Pt.
Milford Sd.
George Sd.
Wanaka
Hawea
Pembroke
Arrowtown
Cromwell
Waitaki R.
Waimate
Oamaru
Doubtful Sd.
Wakatipu
Kingston
Alexandra
Hyde
Hampden
Palmerston
Port Chalmers
Dunedin
Beaumont
Mossburn
Dusky Sd.
SOUTHLAND
OTAGO
CANTERBURY
WESTLAND
Gore
Milton
Balclutha
Riverton
Invercargill
Foveaux St.
Bluff
Tahakopa
STEWART I.
Oban
South C.
Longitude East of Greenwich
168
170
172
174
176
178
36
38
40
42
44
46

GEOGRAPHICAL FACTS AND FIGURES

HIGHEST MOUNTAINS

Name	Range or Country	Height (in feet)
*EVEREST	Himalayas	29,002
GODWIN-AUSTIN (K.2)	Himalayas	28,250
KINCHENJUNGA	Himalayas	28,146
*ANNAPURNA	Himalayas	26,500
*NANDA DEVI	Himalayas	25,645
ILLAMPU (Sorata)	Andes	25,248
ACONCAGUA	Andes	22,976
CHIMBORAZO	Andes	20,498
McKINLEY	Alaska	20,300
COTOPAXI	Andes	19,612
MOUNT LOGAN	Rockies	19,539
KILIMANJARO	Tanganyika	19,321
CHARLES LOUIS	New Guinea	18,000
POPOCATAPETL	Mexico	17,540
ARARAT	Armenia	16,969
KENYA	Kenya	17,040
RUWENZORI	Uganda	16,800
MONT BLANC.	Alps	15,782

The highest mountain in Great Britain is *Ben Nevis*, 4,406 feet, Inverness, Scotland. Next comes *Snowdon* in Wales, 3,560 feet, while the highest in England is *Scafell Pike*, 3,210 feet.

**Everest*, *Annapurna* and *Nanda Devi* in the Himalayas have all been climbed by man.

GREAT LAKES

Name	Country	Length (Miles)	Area (Sq. Miles)
CASPIAN SEA	Asia	680	170,000
SUPERIOR	N. America	383	31,820
VICTORIA NYANZA	Africa	250	26,200
ARAL	Russia (Asia)	265	24,000
HURON	N. America	247	23,000
MICHIGAN	N. America	321	22,400
CHAD	Africa	Varies in area from 20,000 to 7,000 according to season	
NYASA	Africa	350	14,200
TANGANYIKA	Africa	420	12,700
GREAT BEAR	Canada	175	11,660
GREAT SLAVE	Canada	325	11,170
ERIE	N. America	241	9,940
WINNIPEG	Canada	260	9,400
ONTARIO	N. America	193	7,540
BALKASH	Siberia	323	7,050

Loch Lomond in Scotland, with an area of 27 square miles and a total length of 23 miles, is the largest lake in Great Britain. *Windermere* in Westmorland is the largest of the English Lakes, nearly 6 square miles in area and 10½ miles long.

THE LONGEST RIVERS

River	Flows into	Length Miles
MISSOURI-MISSISSIPPI (N. America)	Gulf of Mexico	4,220
AMAZON (S. America)	Atlantic	4,000
NILE (Egypt)	Mediterranean	4,000
YENISEI (Russia in Asia)	Arctic Sea	3,300
CONGO (Africa)	Atlantic	3,000
LENA (Siberia)	Arctic Sea	2,800
MEKONG (Asia)	China Sea	2,800
OBI or OB (Asia)	Arctic Sea	2,700
NIGER (Africa)	Gulf of Guinea	2,600
HOANG-HO (China) or HWANG-HO (Yellow River).	N. Pacific	2,600
AMUR (Russia in Asia)	N. Pacific	2,600
PARANA (S. America)	Atlantic	2,450
VOLGA (Europe)	Caspian Sea	2,400
MACKENZIE (Canada)	Beaufort Sea	2,300
YUKON (Canada and Alaska)	Behring Sea	2,000
ST. LAWRENCE (Canada)	Gulf of St. Lawrence	1,800
DANUBE (Europe)	Black Sea	1,725
EUPHRATES (Asia)	Persian Gulf	1,700
INDUS (India)	Arabian Sea	1,700
BRAHMAPUTRA (India)	Bay of Bengal	1,680
MURRAY (Australia)	Indian Ocean	1,600
ZAMBESI (Africa)	Indian Ocean	1,600
GANGES (India)	Bay of Bengal	1,500

The two longest rivers in Great Britain are the *Severn*, 220 miles long, and the *Thames*, 210 miles. Other famous rivers in Europe are: *Rhine*, 760 miles; *Vistula*, 650 miles; *Seine*, 480 miles; *Tiber*, 260 miles, and *Spree*, 220 miles.

VOLCANOES OF THE WORLD

ACTIVE

LLULLAILLCO, Chile
MT. WRANGEL, U.S.A.
MAUNA LOA, Hawaii
EREBUS, Antarctic
PARICUTIN, Mexico
ASAMA, Japan
HULA, Iceland
KILAUEA, Hawaii
VESUVIUS, Italy
STROMBOLI, Italy
MT. LAMINGTON, New Guinea
MT. HIBOK-HIBOK, Philippines

QUIESCENT

COTOPAXI, Ecuador
SEMEROU, Java
ETNA, Sicily
HALCAKALA, Hawaii
MONT PELEE, Martinique
MT. SOUFRIÈRE, St. Vincent Is.
KRAKATOA, Sunda Strait
IWO-SHIMA, Japan

BELIEVED EXTINCT

ACONCAGUA, S. America
CHIMBORAZO, Ecuador
KILIMANJARO, Tanganyika
POPOCATAPETL, Mexico
ELBRUZ, Persia
FUJIYAMA, Japan

WATERFALLS

Most famous of the world's waterfalls are Niagara Falls on the Canada-U.S.A. border in North America and the Victoria Falls on the Zambesi in Rhodesia. The Niagara Falls are divided into two: the American and the Horseshoe Falls. The first is 1,080 feet wide and the second 3,100 feet wide, and there is an average fall of 165 feet. The Victoria Falls are just over a mile wide and have a fall of 357 feet.

Not so well-known but equally majestic are the Iguassa Falls, a series of cataracts extending to a width of over two miles and having a fall of over 200 feet. These falls on the Iguassa river are near the border of three South American countries: Argentina, Brazil and Paraguay.

Other famous falls, which have a greater height than any of these but cannot compare in width, are given in the table following.

HIGHEST WATERFALLS

Name	Place	Height ft.
RIBBON FALL	Yosemite, U.S.A.	1,612
UPPER YOSEMITE (*a*)	,, ,,	1,430
UITSHI	British Guiana	1,200
TAKAKAW	Canada	1,200
WOLLOMOMBIE (*b*)	New South Wales	1,100
CHIROMBO	Tanganyika	880
KING EDWARD VIII	British Guiana	840
GERSOPPA (*c*)	Mysore, India	829
SUTHERLAND (*d*)	New Zealand	815
KAIETEUR	British Guiana	741
KALEMBO	Tanganyika	705
MALESUNYANE	Basutoland	660
NEVADA	Yosemite, U.S.A.	594
STIRLING	New Zealand	505

(*a*) *Out of a total fall of* 2,565 ft.; (*b*) 1,700 ft.; (*c*) 960 ft.; (*d*) 1,904 ft.

The highest waterfall in Great Britain is Glomach, Ross-shire, Scotland, which has a fall of 370 feet.

THE BRITISH COMMONWEALTH OF NATIONS

The countries which form the British Commonwealth of Nations occupy some 14,435,000 square miles of the land areas of the world, with a total population of approximately 540 million people. This is roughly one-quarter of the Earth's land surface, with about one-quarter of the world's population.

Members of this Commonwealth of Nations are:

The United Kingdom of Great Britain and Northern Ireland, including the Isle of Man and the Channel Islands.

The self-governing Dominions (*with their capitals in brackets*); Canada (Ottawa); Australia (Canberra); New Zealand (Wellington); South Africa (Seat of Government: Pretoria; Legislature: Capetown); Ceylon (Colombo).

The Union of India (New Delhi) and Pakistan (Karachi) are now republics but both remain members of the Commonwealth.

Colonies and Protectorates (*with their capitals in brackets*);

Asia: Federation of Malaya (Kuala Lumpur); Singapore (Singapore); North Borneo and Labuan (Jesselton); Brunei (Brunei); Sarawak (Kuching); Hong Kong; Aden.

Mediterranean: Malta and Gozo (Valetta); Cyprus (Nicosia); Gibraltar.

Africa: Southern Rhodesia (Salisbury), a self-governing British colony. Northern Rhodesia (Lusaka); Gold Coast (Accra) and Ashanti (Kumasi); Sierra Leone (Freetown); Tanganyika (Dar-es-Salaam); Gambia (Bathurst); Kenya (Nairobi); Nigeria, with British Cameroons (Lagos); Basutoland (Maseru); Bechuanaland (Mafeking); Nyasaland (Zomba); Somaliland (Berbera); Swaziland (Mbabane); Uganda (Entebbe); and the islands of Ascension (Georgetown); Mauritius (Port Louis); Seychelles (Victoria); St. Helena (Jamestown); Zanzibar (Zanzibar).

The Anglo-Egyptian Sudan (Khartoum) is jointly administered by Britain and Egypt.

Tanganyika, as well as part of the Cameroons and part of Togoland are administered by Britain under United Nations trusteeship.

America: Jamaica (Kingston); Bahamas (Nassau); Leeward Islands (St. John's); Windward Islands (St. George's); Barbados (Bridgetown); Trinidad and Tobago (Port of Spain); Bermuda (Hamilton); British Guiana (Georgetown); British Honduras (Belize); Falkland Islands (Port Stanley).

Australasia and Oceania: Papua (Port Moresby); N.E. New Guinea (Rabaul); Fiji and Pacific Islands (Suva); Nauru Island (Nauru); Norfolk Island (Kingston); Western Samoa (Apia); Cocos Keeling Islands and Christmas Island.

Papua (South-east New Guinea with adjacent islands), together with North-eastern New Guinea, Nauru Island and Cocos Keeling Islands are administered by Australia; Western Samoa by New Zealand.